The OIL WEEKLY

A Journal for
Oil and Gas Producers and Field Men

HOUSTON
LOS ANGELES

NEW YORK
FT. WORTH

TULSA
CHICAGO

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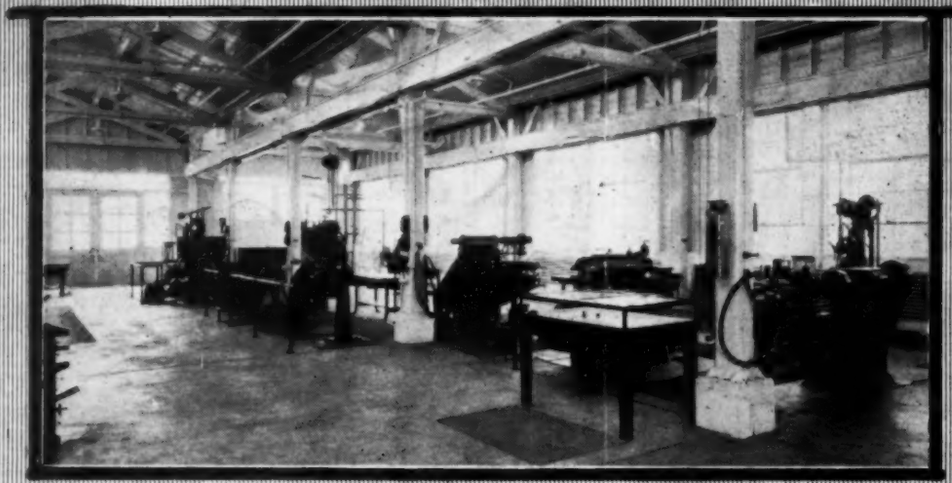
PAGE 19

The Supreme Quality of

HUGHES "ACME" TOOL JOINTS

is obtained by using

**Highest Grade Alloy Steel—
Scientifically Heat Treated**



HUGHES
ACME
TOOL
JOINT

Proper chemical constituents do not of themselves assure good steel—**But** good steel **must be** of correct chemical analysis.

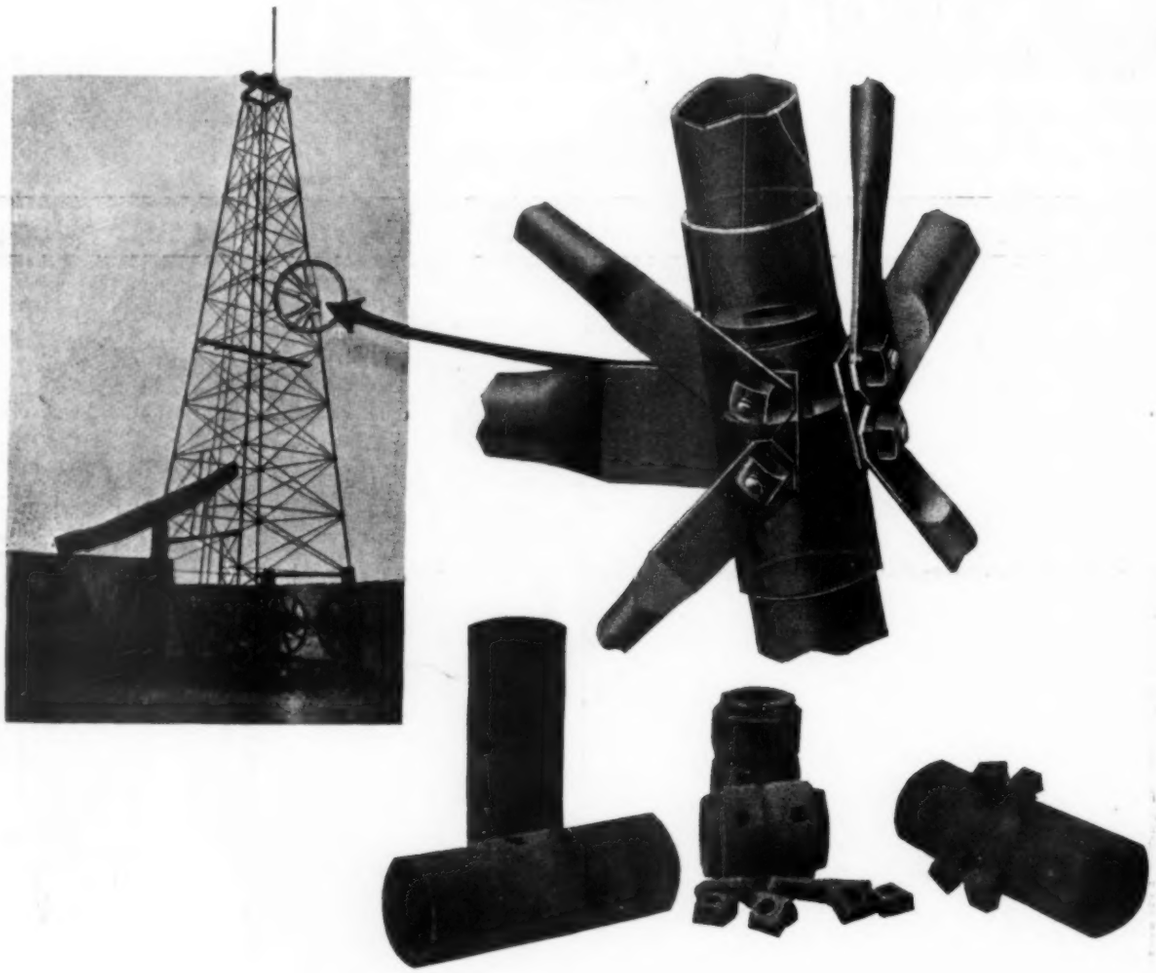
The chemical analysis of steel used in the manufacture of Hughes Tool Joints is checked in the Hughes Chemical Laboratory, pictured above.

No expense is spared in so building Hughes Tool Joints that they give long satisfactory service—yet they cost no more.

Stocked by Supply Stores Everywhere

HUGHES TOOL COMPANY
HOUSTON, TEXAS
Branches: Los Angeles, California—New York City, N. Y.

STEEL SUPERIOR DERRICK



SUPERIOR Light Pumping Derricks have a most unique joint in which the girt is connected to the leg by means of two ¾-inch stud bolts. These stud bolts are permanently set in the sleeve connections and extend through the wall of the reinforcing plug which, in addition to strengthening the joint, furnishes an accurate seat and inside reinforcement for the end of each tubular leg section. Note also the 14-foot opening at the front of the derrick to facilitate the handling of rods.

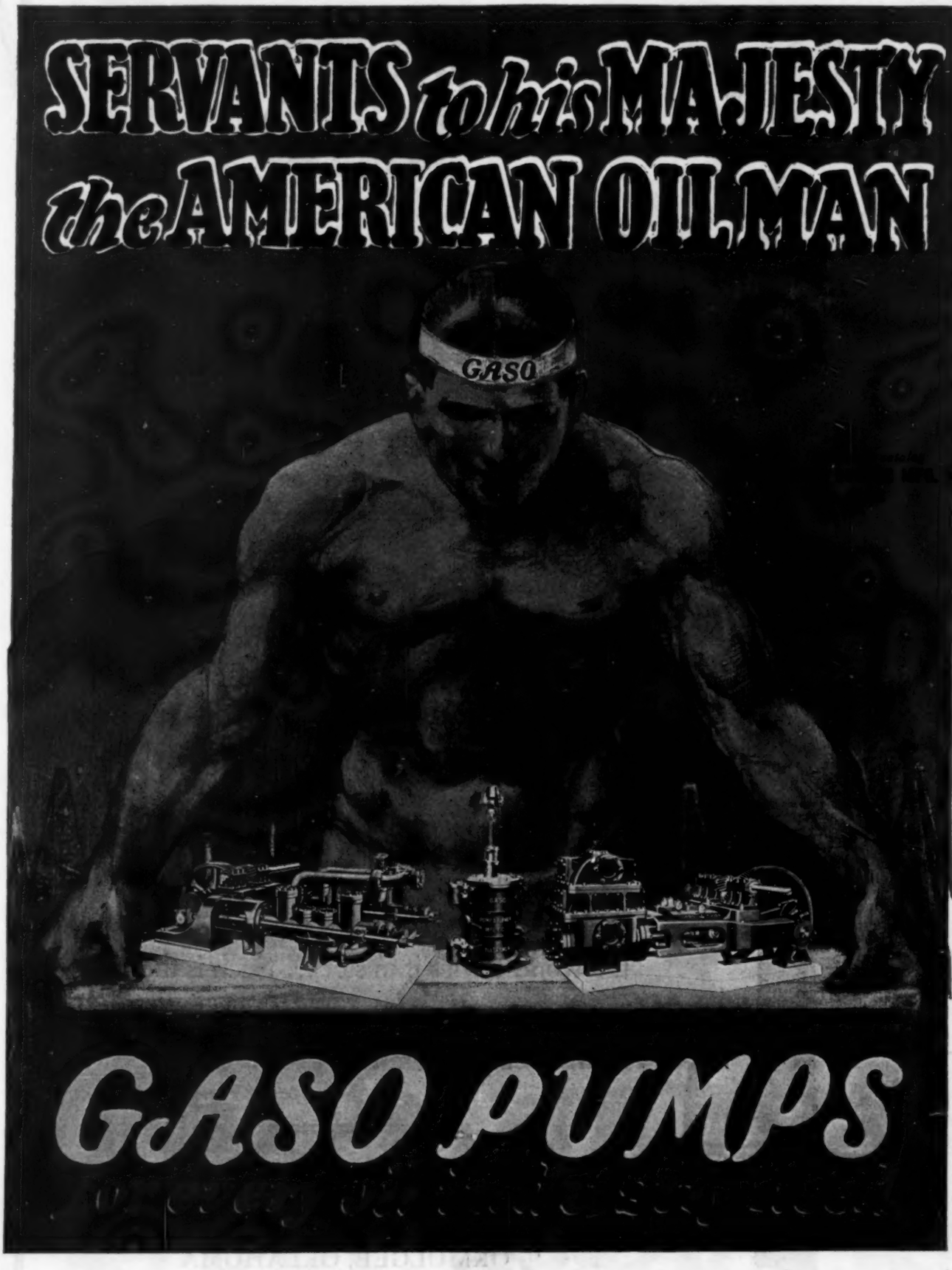
SUPERIOR TUBE COMPANY

STEEL DERRICKS, CASING, TUBING, LINE PIPE

KANSAS CITY, MO.

PITTSBURGH DALLAS TULSA ST. LOUIS CASPER

THE OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 1716 Dallas Ave., Houston, Texas. Subscription price $1.00 per year; 10 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879.


SERVANTS to his MAJESTY
the AMERICAN OIL MAN
GASO
GASO PUMPS

TEMPER BURNS SCREW

The Burns Tubular Temper Screw

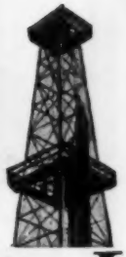
No tool is serving the Petroleum Industry more efficiently than the Burns Tubular Temper Screw. It is Standard Equipment on all tools, and its presence always indicates the selection of the highest type of drilling tools.

A most complete acknowledgment of the superiority of the Burns Temper Screw is that each and every Supply Company throughout the world carries it in stock. Such is the monument erected to the manufacturers of the Burns Temper Screw.

BURNS TOOL COMPANY

OKMULGEE, OKLAHOMA

Say you saw it in The Oil Weekly



The Dividing Line Between Profit and Loss

The crew with the rig that stands the loads and strains of fast drilling reaches pay sand before the crew that trusts to luck—and—a—wooden—derrick!

Practically every "tool pusher" has seen the time when drilling success and drilling failure depended on THE DERRICK.

It seldom takes more than one such experience to prove that only the best rig is good enough when you consider it is THE DIVIDING LINE BETWEEN PROFIT AND LOSS.

If you have never had bad luck with a wooden derrick, your turn is next. You never know when it is coming. And when you do, we venture to guess your name will be added to the long list of those who depend on INTERNATIONAL "IDECO" Galvanized Steel Rigs to see them through bad luck, hard drilling and high winds.

Why wait? There's an INTERNATIONAL "IDECO" warehouse local to your wells.

Write, phone or wire for full information on INTERNATIONAL "IDECO" Steel (Galvanized) Derricks, Complete Rigs and Equipment.

The International Derrick & Equipment Co.

Columbus, Ohio Los Angeles Cal.

Branches and Warehouses

TULSA HOUSTON CASPER SHREVEPORT SMACKOVER OIL CITY
BAKERSFIELD TAFT LOS ANGELES EXPORT OFFICE—No. 2 Rector St., New York

The Largest Company Devoted Exclusively to the Manufacture of Steel (Galvanized) Equipment for the Oil, Gas and Artesian Industries.

INTERNATIONAL

(GALVANIZED)

STEEL DERRICKS

Say you saw it in The Oil Weekly

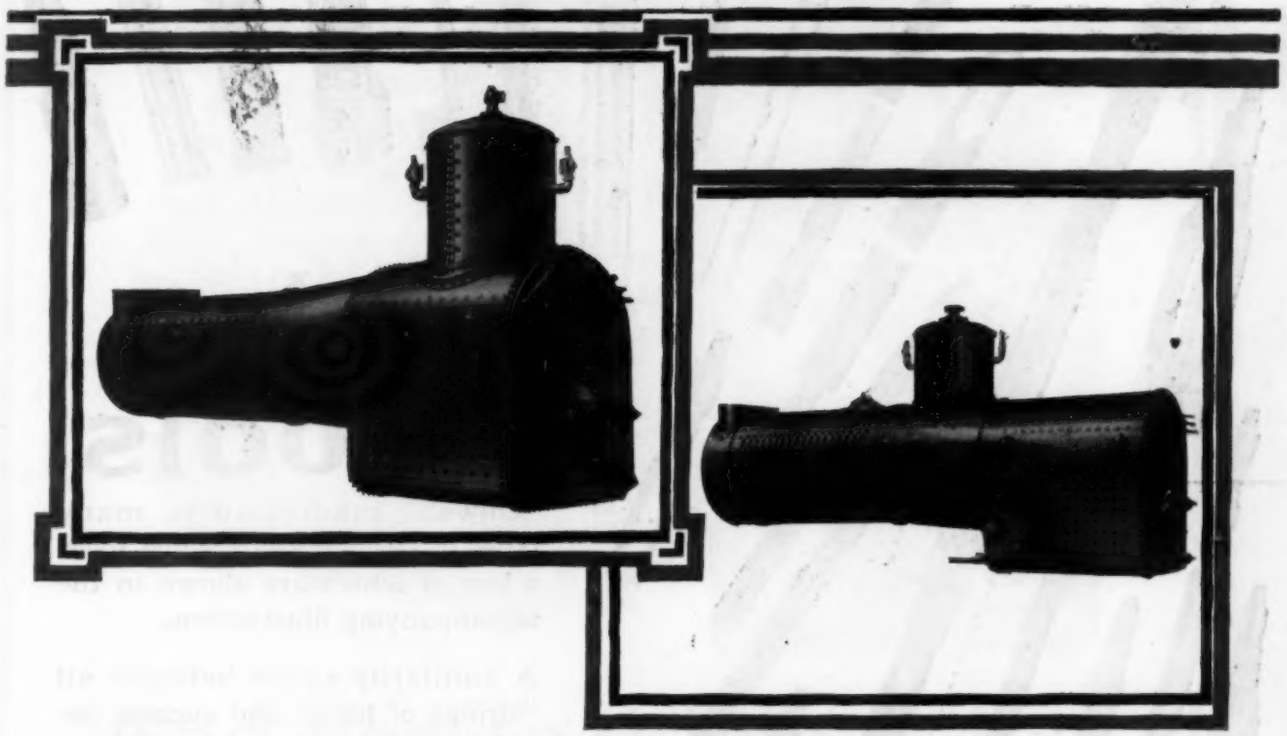
LUCEY A.S.M.E.

Wherever

THE NAME IS A LUCEY GUARANTEE

there's oil

BOILERS



Designed, Built, Tested and Stamped According to the A.S.M.E. Code

Lucey Oil Field Boilers are recognized as the leaders. They are noted for their steaming qualities and low fuel consumption.

They are built in strict accordance with the rules of the Boiler Construction Code of the American Society of Mechanical Engineers, and carry stamping in accordance with this Code.

All materials conform to the specifications approved by the American Society for Testing Materials.

All plates are drilled and shaped to standard dies and templates, and the flanging and riveting is done by hydraulic machinery.

All operations during construction and test are under the observation of a licensed inspector not in our employ, and a certificate of inspection is furnished with each A. S. M. E. boiler.

Built for either 125 or 150 pounds working pressure, and in sizes from 40 to 100 H.P. in either locomotive or tubular type.

Complete specifications are given in Lucey Boiler Circular No. 101. Write for it.

LUCEY MANUFACTURING CORPORATION

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Corsicana, Texas Eldorado, Ark. Smackover, Ark. McKittrick, Cal. Tulsa, Okla. Tonkawa, Okla.
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WORKS:

Chattanooga, Tenn. Houston, Texas

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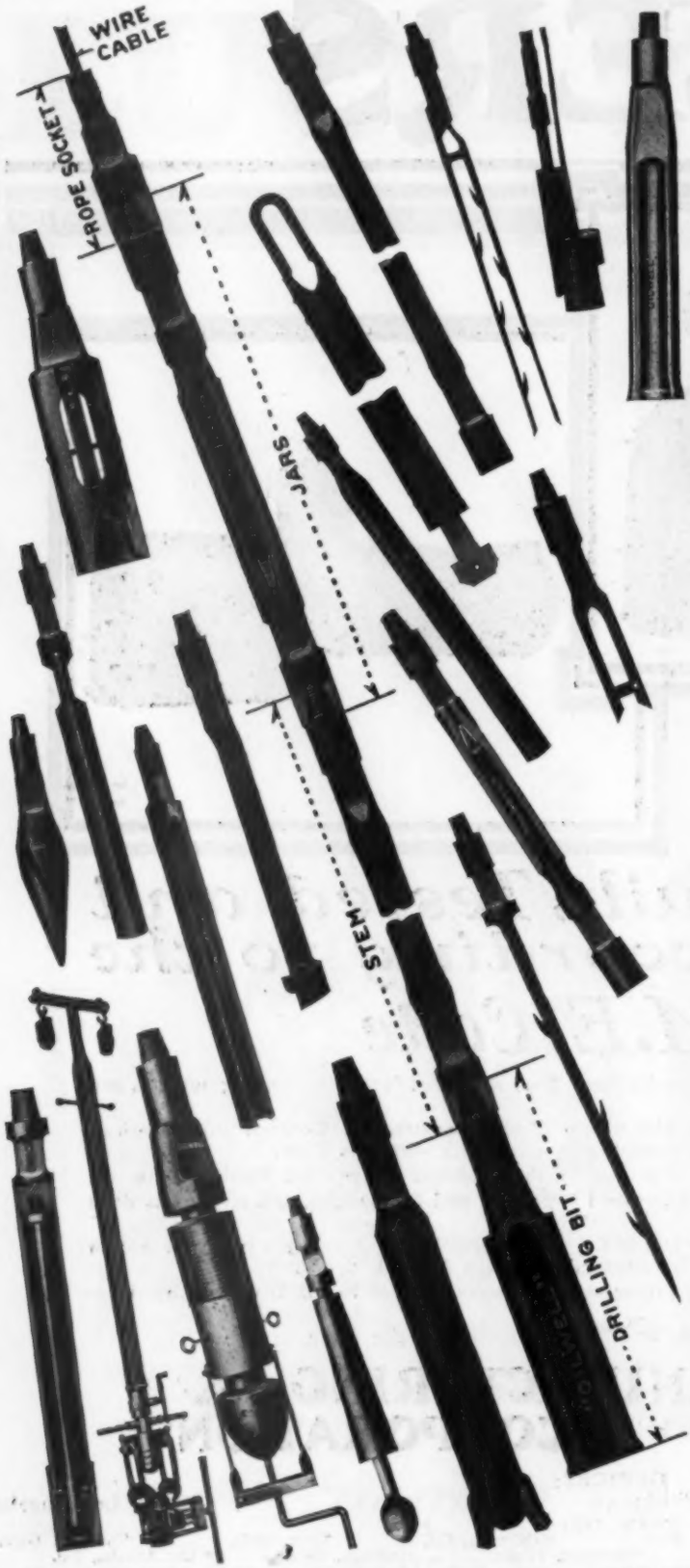
AGENTS:

General Supply Company, Casper, Wyoming
International Supply Company, Stroud and Wewoka, Okla.



Cable Tools

"Oilwell" manufactures many types of Drilling and Fishing tools, a few of which are shown in the accompanying illustrations.

A similarity exists between all "strings of tools" and success depends largely upon the correct combination of tools and the perfect fit of the joints.

"Oilwell" Engineers are prepared to advise suitable combinations, and "Oilwell" Tools have a world-wide reputation for strength, durability, and workmanship.

For complete information, inquire at any of our 100 Branches.

OIL WELL SUPPLY CO.

PITTSBURGH, U. S. A.

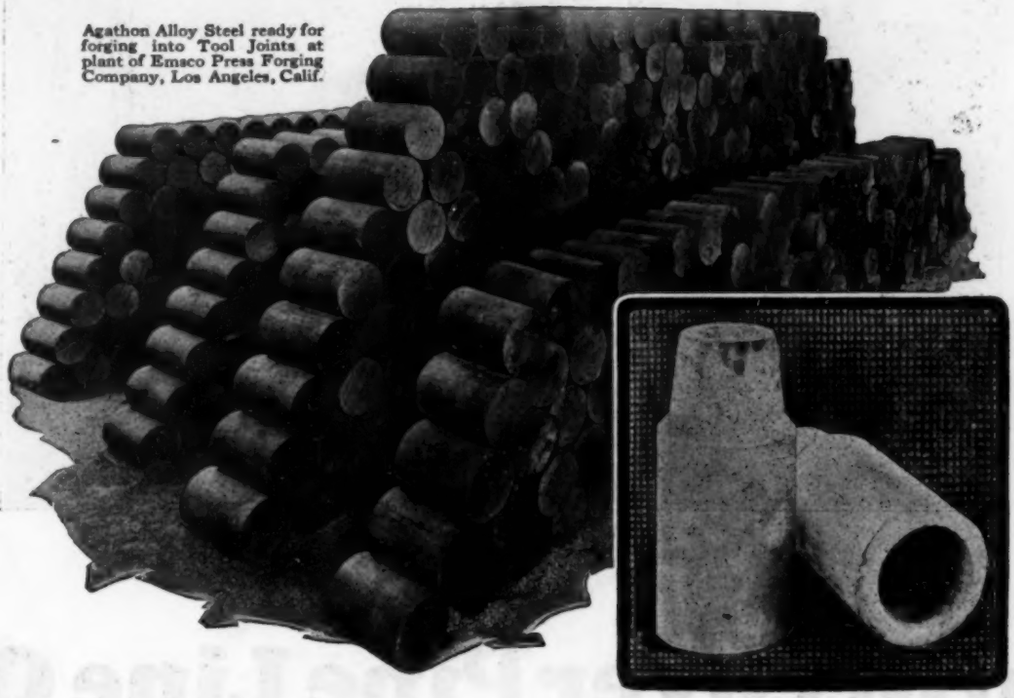
NEW YORK SAN FRANCISCO
LOS ANGELES TAMPICO LONDON

"OILWELL" TRADE MARK REGISTERED

OILWELL SUPPLY CO

World's Largest Manufacturers of Oil Field Equipment

Say you saw it in The Oil Weekly



Agathon Alloy Steel ready for forging into Tool Joints at plant of Emsco Press Forging Company, Los Angeles, Calif.

And For Tool Joints, Too

A FEW years ago Agathon Alloy Steels were little known in the oil-drilling industry. Finally these tough, super-steels were adopted for drill bits. Their highly successful performance in this service has resulted in their general adoption for Tool Joints, Jars and other parts of oil-drilling equipment subjected to great wear, stress or strain. If you are not acquainted with Agathon Alloy Steels, send for our interesting booklet. If you have a steel problem, our metallurgists will help you solve it free of charge. Write us.

AGATHON STEELS

THE CENTRAL STEEL COMPANY, Massillon, Ohio

Swetland Bldg., Cleveland
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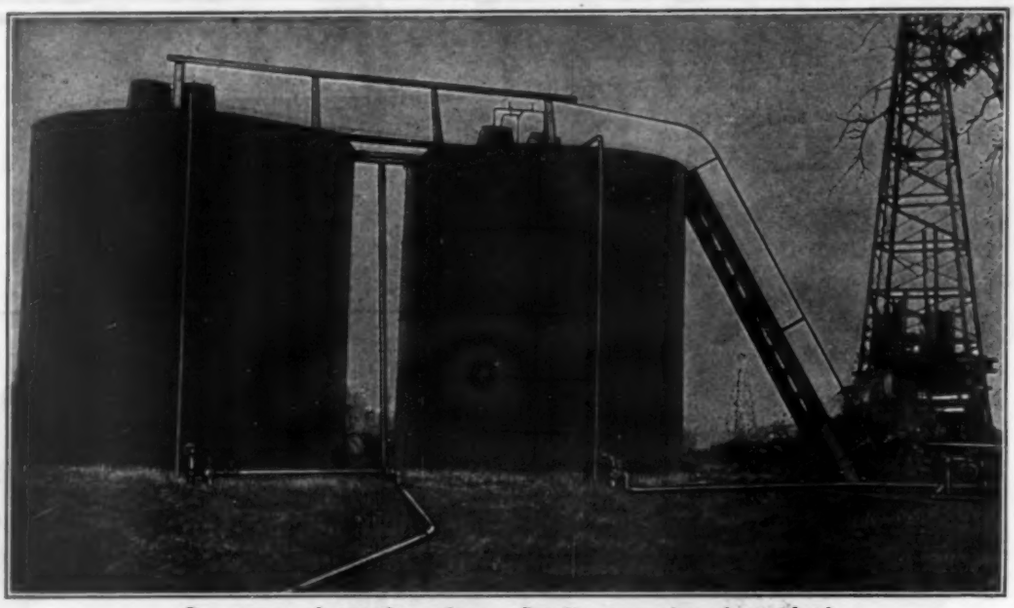
AGATHON ALLOY STEELS



One type of treating plant. Small reservoirs above feed Tret-O-Lite into Cut Oil. Gas or air is used for agitation.

To Recover Pipe Line Oil From Cut Oil

Just 3 Simple Steps:—

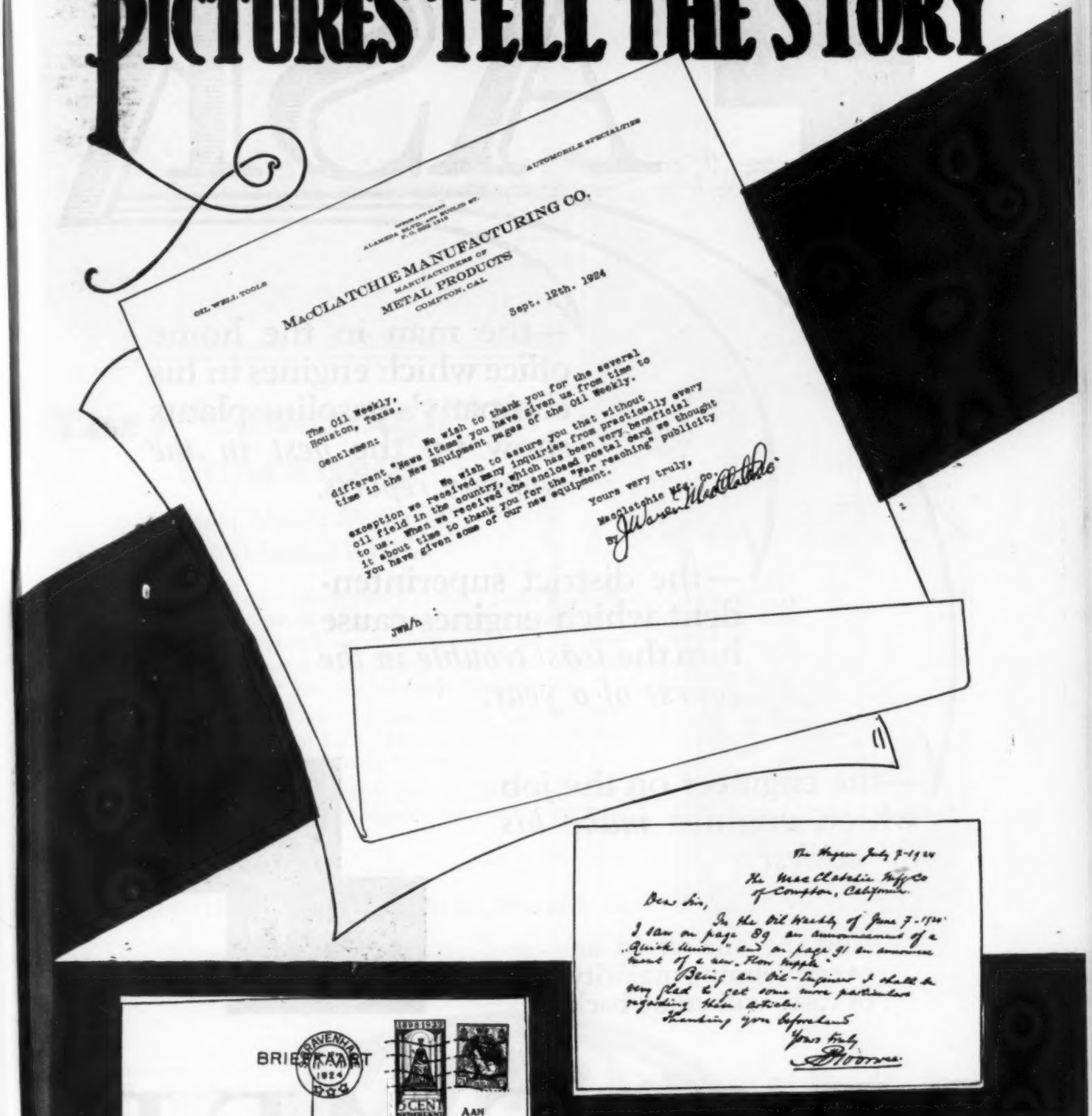
1. Mix Tret-O-Lite into Cut Oil.
2. Give Oil and Water Time to Separate.
3. Draw Off Pipe Line Oil from Top.

An inquiry will bring our nearest field expert, with full information

WM. S. BARNICKEL & CO.
St. Louis, Mo.
Offices and Plant: Webster Groves, St. Louis Co., Mo.

Tret-O-lite
Reg. U. S. Pat. Off.

PICTURES TELL THE STORY


OIL WELL TOOLS
AUTOMOBILE SPECIALTIES
MacCLATCHIE MANUFACTURING CO.
MANUFACTURERS OF
METAL PRODUCTS
COMPTON, CAL.
Sept. 12th. 1924
The Oil Weekly,
Houston, Texas.
Gentlemen:
We wish to thank you for the several different "News items" you have given us from time to time in the New Equipment pages of the Oil Weekly.
We wish to assure you that without exception we received many inquiries from practically every oil field in the country, which has been very beneficial to us. When we received the enclosed postal card we thought it about time to thank you for the "far reaching" publicity you have given some of our new equipment.
Yours very truly,
Macclatchie Mfg. Co.
By J. Warren MacClatchie
JWM/b
The Hague July 7-1924
The MacClatchie Mfg Co
of Compton, California
Dear Sir,
In the Oil Weekly of June 7-1924 I saw on page 89 an announcement of a "Quick Union" and on page 91 an announcement of a new "Flow Nipple".
Being an Oil-Engineer I shall be very glad to get some more particulars regarding these articles.
Thanking you beforehand
Yours truly
P. Hoornes
BRIEFKAART
'S-GRAVENHAGE
1924
5 CENT
AAN
The MacClatchie
Manufacturing Comp.
Compton (Calif)
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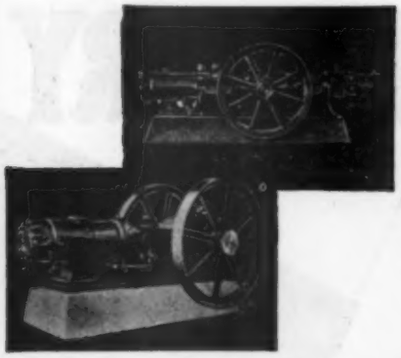
The Hague (Holland)

The OIL WEEKLY has more than 450 paid foreign circulation and goes into more than 30 foreign countries.

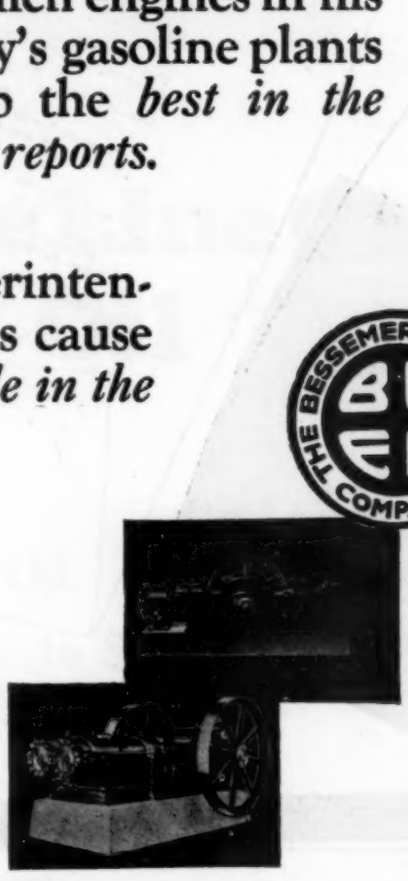


ASK

—the man in the home office which engines in his company's gasoline plants show up the *best in the monthly reports.*

—the district superintendent which engines cause him the *least trouble in the course of a year.*

—the engineer on the job which engines *make his job easiest*



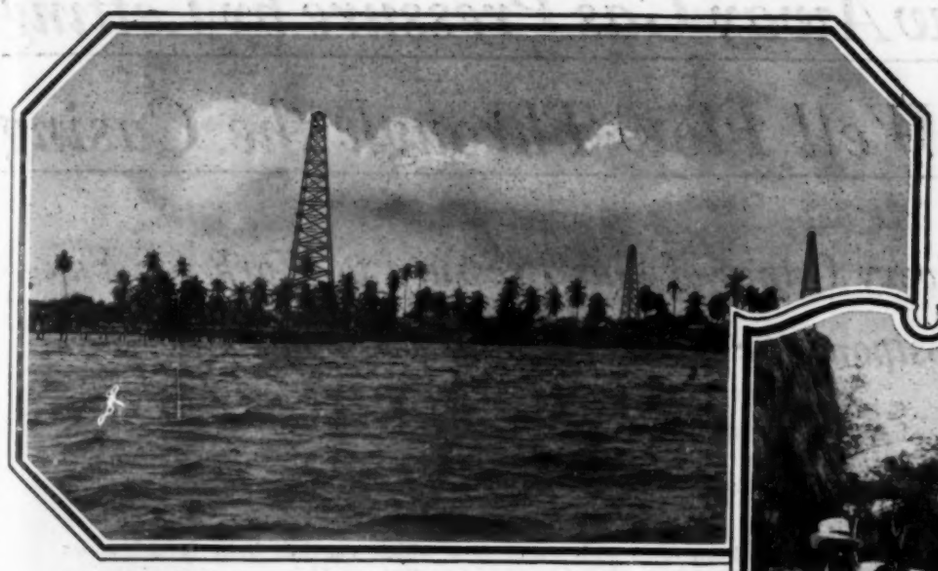
And the answer in an overwhelming majority of cases will come back

BESSEMER

BESSEMER OIL FIELD ENGINES – COMPRESSORS VACUUM PUMPS – ROLLER PUMPING POWERS

THE BESSEMER GAS ENGINE COMPANY 62 YORK STREET, GROVE CITY, PA.

Say you saw it in The Oil Weekly



Moore drilling derricks in La Rosa Field, on Lake Maracaibo, Venezuela. Well on left making 4500 barrels.

Another kind of "petting party." Mr. C. W. Hamilton, well known American oil man, in intimate conversation with one of his Venezuelan friends. (We are sure the Madam will not object.)

They "come high" in Venezuela

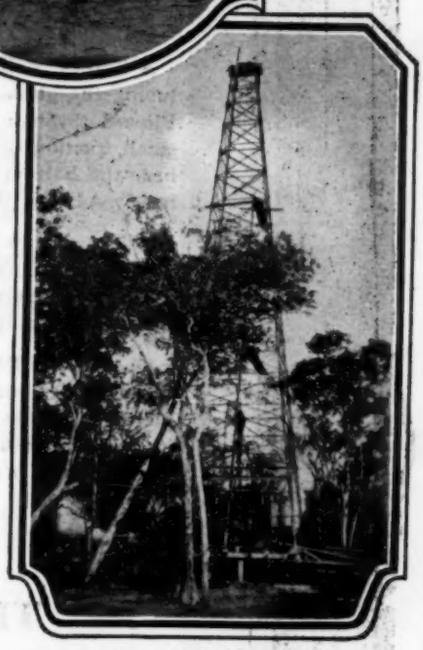
112-foot Moore Derricks 4500-barrel Well

IN Venezuela fields, as elsewhere, wherever you go the familiar sight of Moore derricks greets the eye. Scores of these large and powerful drilling derricks are in use in these fields, and more are constantly being added, proving the truth of the saying that nothing succeeds like success.

The two derricks above are 112-foot Moore Combination drillers, in La Rosa Field on Lake Maracaibo. The one on left is making 4500 barrels. The one in center is now drilling.

Proof against wind, fire, rot, and insects, Moore derricks render invaluable service in safeguarding production and heavy drilling investments.

Send for Catalog



Another 112-foot Moore Driller. In Irara Field, near Maracaibo, Venezuela

LEE C. MOORE & COMPANY, Inc., Pittsburgh, Pa.

ESTABLISHED 1907

CASPER, WYO. Midwest Building
DALLAS, TEXAS Magnolia Building
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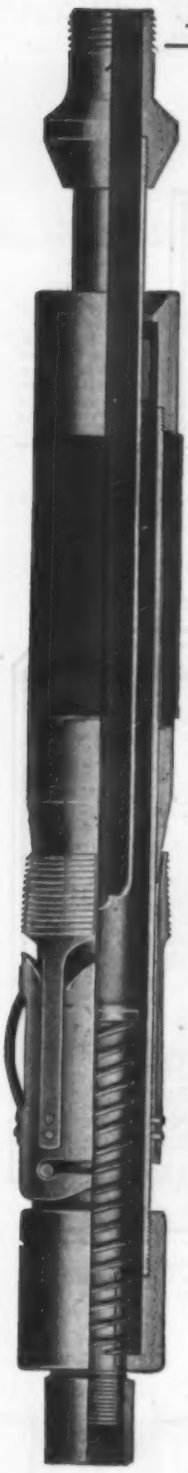
MOORE TUBULAR STEEL DERRICKS

Don't Throw Away Gas Pressure by Letting Your Well Flow Through the Casing



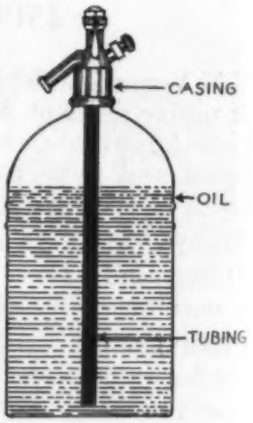
Put Every Ounce of Gas Pressure to Work for You— Postpone the Time You Must Go on the Pump

A well flowing through the open casing is wasting gas pressure which, conserved, would be worth hundreds, probably thousands, of dollars to you.

Such a well is like a siphon bottle with the glass tube removed. (See illustration at right.) This bottle has been filled with water into which gas has been forced under pressure. If the tube is removed and the trigger pressed, the sudden expansion of the released gas in the water causes a frothing overflow of liquid, as you have seen a beer bottle overflow when opened. Soon, however, all the gas has escaped—yet only a third or less of the liquid has been carried by it out of the bottle.

With the glass tube in place, however, the gas pressure is imprisoned until it has forced practically ALL of the liquid from the bottle. Only when the liquid has left the lower tube opening clear does any appreciable volume of gas escape.

A flowing well is exactly similar. The casing is the bottle neck, the tubing the glass tube, a GUIBERSON Control Head Packer the cork. Flowed through the casing, the gas quickly escapes, carrying only a small fraction of the oil. Flowed through the tubing, with its opening near the bottom of the sand, the gas is imprisoned until it has forced nearly ALL of the oil to the surface.



If its pressure fails before this has been fully accomplished, nevertheless ALL the pressure has been utilized. Also, this pressure has served to wear channels from all parts of the sand to the bore of the well, so that thereafter the sand will drain more easily.

The GUIBERSON Control Head Packer, patented, is the only packer which places your well fully under your control. It is the only completely scientific packer. Allow us to send you our booklet explaining its advantages and telling WHY it can be run even in flowing wells against heavy pressures, a feat which can be accomplished with no other packer.

THE GUIBERSON CORPORATION

Box 1106, Dallas, Texas

OKLAHOMA BRANCH: 402 W. First St., Tulsa.

CALIFORNIA BRANCH: 1737 E. 7th St., Los Angeles.

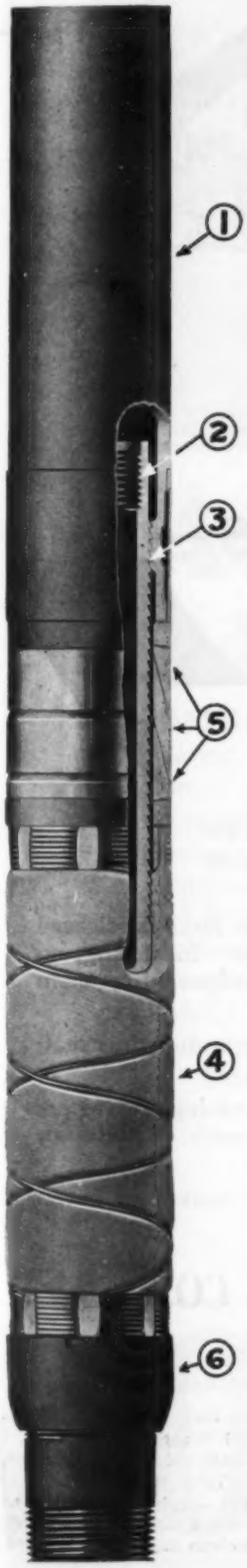
318 First Nat'l Bank Bldg., HOUSTON

506 Trust Bldg., NEWARK, O.

GUIBERSON

BETTER BE SAFE THAN SORRY

Either of These



Layne Ratchet Packers

can be depended on to deliver the maximum of packer efficiency without danger of bursting the casing.

Ask for Literature Covering

Lead and Canvas "Double Seal" Ratchet Packer

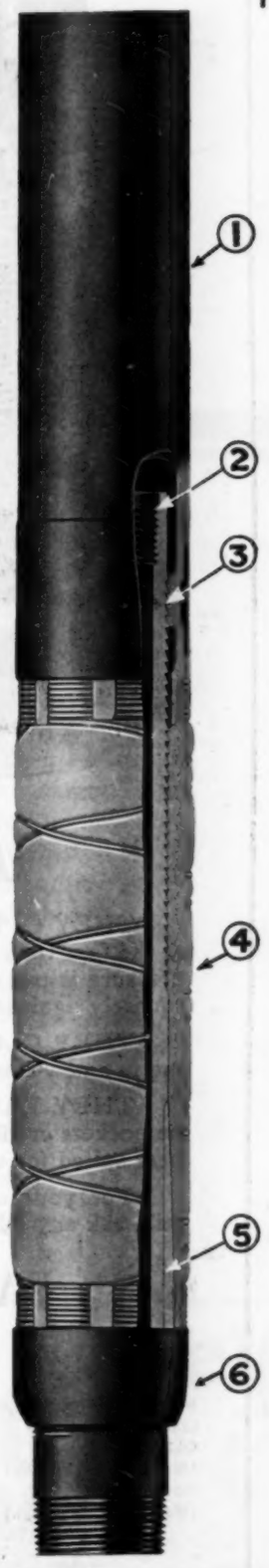
THE LAYNE

Lead Cone and Canvas Ratchet Packer

Packers and Keystone Wire-Wrapped Screens

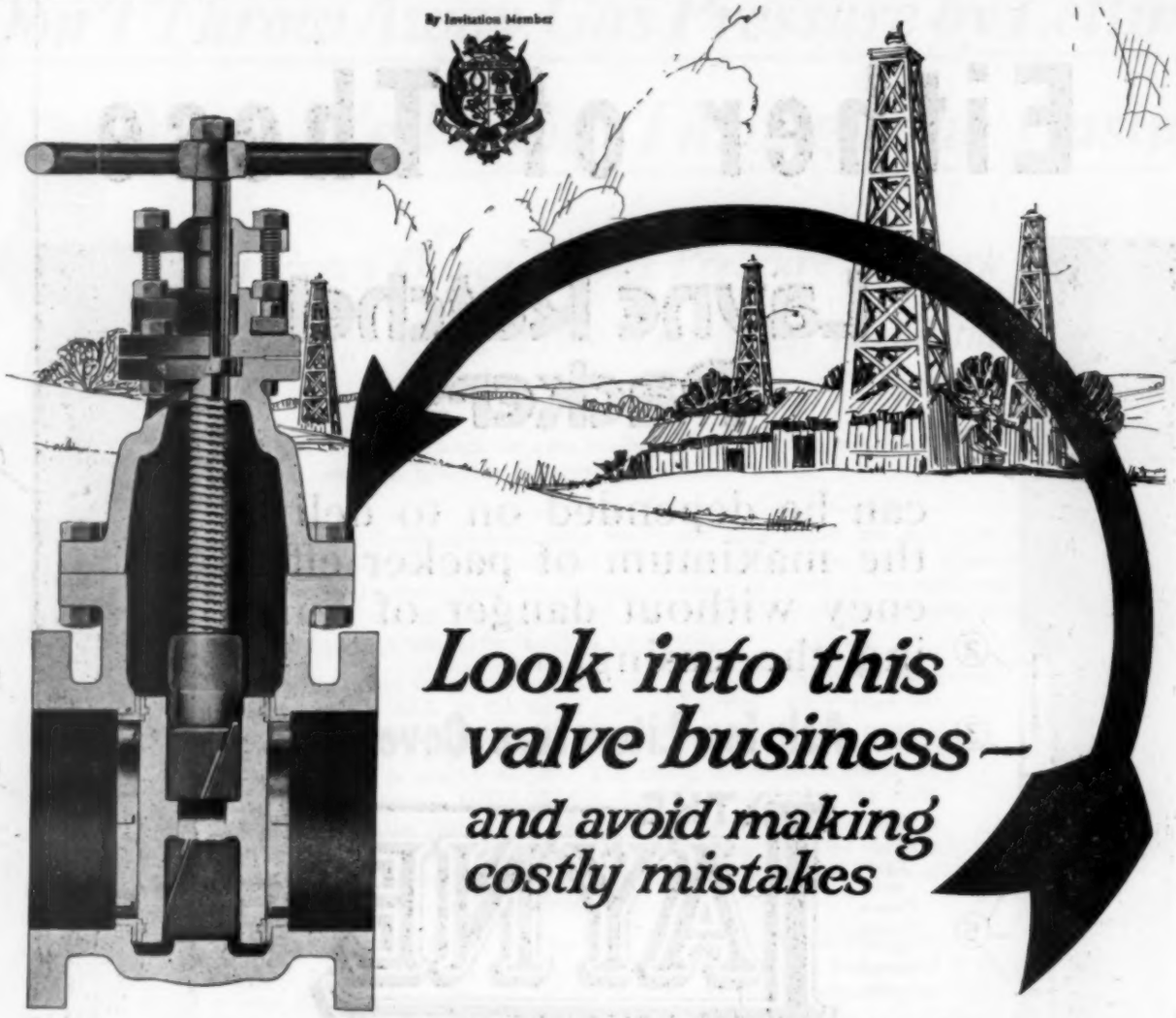
24 HOUR SERVICE—
SEVEN DAYS IN THE WEEK

Watch For the Layne Back-Up Tong
It Will Be Out Soon.



The Layne & Bowler Co.
Houston, Texas

By Invitation Member



Look into this valve business— and avoid making costly mistakes

If Darling Gate Valves weren't any better than any other valves there would be no excuse for making comparisons. But they are better—a whole lot better, and here's why—

THEY OPERATE EASILY because the pressure of the wedges against the discs is released at the first turn of the wheel, allowing the discs to ascend free and clear of seats. In closing, no pressure is put on the discs until just before they are tight shut; then the wedges force them squarely against the seats, making a perfect seal.

THEY CLOSE TIGHT because the discs are free to revolve with each operation—thus seating in a new clean position.

THEY LAST LONGER because the ground faces of the discs are self cleaning; there are no pockets or ribs to collect sediment or scale; and because they are honestly made of materials best suited for oil field work.

For your own satisfaction compare Darling Gate Valves with any other make—or better still, ask any Old Timer what luck he has had with Darlings.

DARLING VALVE & MANUFACTURING CO.

Main Office: Williamsport, Pa.

Branch Offices:
New York
Chicago
Oklahoma City
(Mr. Earl J. Connelly)
Houston
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DARLING GATE VALVES

Mid-Continent Distributors:
Frick-Reid Supply Co., Tulsa and Branches in all fields.
International Supply Company, Tulsa, and Branches.
Atlas Supply Co., Muskogee, Oklahoma City and Fort Worth.
Petroleum Supply Co., Houston.

Acme Sucker Rods pay big dividends

JONES SUCKER RODS are the nearest approach to 100% perfection of any Rod made—they have no equals.

Sucker Rods today must stand enormous strains—must stand pulls and jerks and turns—only an exceptional rod will stand up under this service.

JONES RODS are scientifically made—they have no weak spots—no flaws — pipes, or imperfect wrench heads—from the rolling mill—through every process until they are placed in the cars as finished rods, they are carefully watched—the steel is to our own analysis—every length is tested in our laboratories for uniformity of structure and for hidden flaws.

JONES engineers know Sucker Rods—have spent a life time in making them the BEST—we invite competitive laboratory tests and will co-operate with any user undertaking these tests.

THE S. M. JONES COMPANY

TOLEDO, OHIO

Established 1893

Mid-Continent Office: 601 Wright Bldg., Tulsa, Okla.

Representatives Everywhere There's Oil

JONES ACME Steel SUCKER RODS

KEROTEST VALVES for Oil Field and Refinery Service

Many oil field operators are quite critical in selecting equipment for their wells. They should be especially critical when choosing heavy duty valves. Only the best product obtainable is good enough for this service.

For heavy duty and high temperature use, KEROTEST valves are giving exceptional service. Our steady growth of new customers proves our contentions.

KEROTEST products are given a duration test under high pressure, using kerosene as the testing medium. An inspector from a nationally recognized testing laboratory approves all the materials and witnesses the tests of all products. A certificate of inspection and test is furnished with each valve.

The KEROTEST catalog will give all the details, write for your copy today.

We also manufacture a complete line of high grade fittings in which KEROTEST quality standards are maintained throughout.

PITTSBURGH REINFORCED BRAZING AND MACHINE COMPANY

Pittsburgh, Penna.

Carried in Stock and Sold by:

NORVELL-WILDER HARDWARE CO.—Houston, Beaumont, Shreveport.

GRINNELL COMPANY of the PACIFIC—Los Angeles, San Francisco.

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Say you saw it in The Oil Weekly

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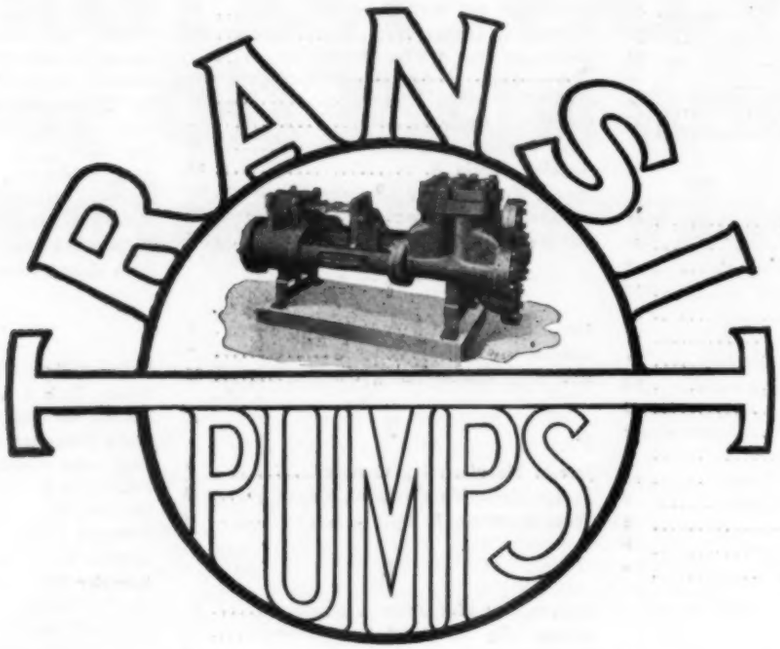

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Vol. 35 **FRIDAY, NOVEMBER 14, 1924** **No. 8**

Crude Market Dangerously Optimistic

Danger that industry will not profit from previous experience becoming more evident

INDICATIVE of the gradual improvement now taking place in the crude oil market in the Mid-Continent and in the East, shipments of the Prairie Pipe Line Company to the Appalachian region during October showed a gain over the amount of crude oil moved North and East during September, the Prairie's total for October being 3,239,587.97 barrels.

Caution—that element so much needed right at this time by both producers and independent refiners, apparently, as in the past, is not being overworked. On almost evrey side among well informed oil men is heard the statement that if conservatism is not practiced by the industry, 1925 will be ushered in with enormous stocks of crude and refined oils with which to menace the price structure through another twelve months. This should not happen if the industry is to profit by the 1923 and 1924 records.

The rapid turn of affairs for the better the last four weeks duplicates in a measure the experience of last winter when through the offering of premiums the crude oil market was advanced by the principal purchasers at a time when there was actually no economic excuse for it.

Early Advance

That present crude prices will be advanced before the first of the year appears altogether likely and it may come about by Thanksgiving, although this is a probability more than a possibility.

Both the Prairie and Sinclair are after new connections as are most of the other buying agencies in the Mid-Continent field. In the Appalachian region in the East the crude market is tightening perceptibly and it would appear that an increase in that territory might be more imminent than in the Mid-Continent. Producers in the East are said to be holding on to their oil with a surprising tenacity and are running it to storage instead of disposing of it at the present posted schedule.

This has resulted in the rapid accumulation of stocks and pipe line companies report their storage capacity just about taxed to the utmost. Such a condition as this cannot continue for long and with the producers confidently expecting a raise it is altogether likely they will hold on until the raise actually comes.

Premiums are becoming more open and more extended with wider limitations as to delivery.

Crude purchasers in other sections of the country are beginning to again come to the Mid-Continent light oil area for their raw products and just this last week it was reported, but without official confirmation, that a West Coast company now is in the Mid-Continent market for upwards of 500,000 barrels of oil ranging between 32 and 39 gravity and for which, so the report goes, they would be willing, if necessary, to pay as high as 25 cents a barrel premium. It is known that several Atlantic seaboard refiners are also quietly negotiating for crude purchases in the Mid-Continent but no large contracts have come to light as yet.

Standard Oil Company (New Jersey) is not in the market for Mid-Continent

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The OIL WEEKLY wants only such subscribers as are engaged in the oil producing or pipe line business, or sub-branches of the producing and pipe line business. It has no desire for investor circulation, and it reserves the right and will exercise the right to reject subscriptions coming from persons whose interest in the oil industry is through the purchase of oil stock.

R. L. DUDLEY, Publisher.

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Restraint on drilling will help put producers in advantageous economical position

By Grady Triplett
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February	1,105	798	40	267	183,204
March	1,510	948	211	351	293,772
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June	1,808	1,215	193	400	182,750
July	1,637	1,087	168	382	203,875
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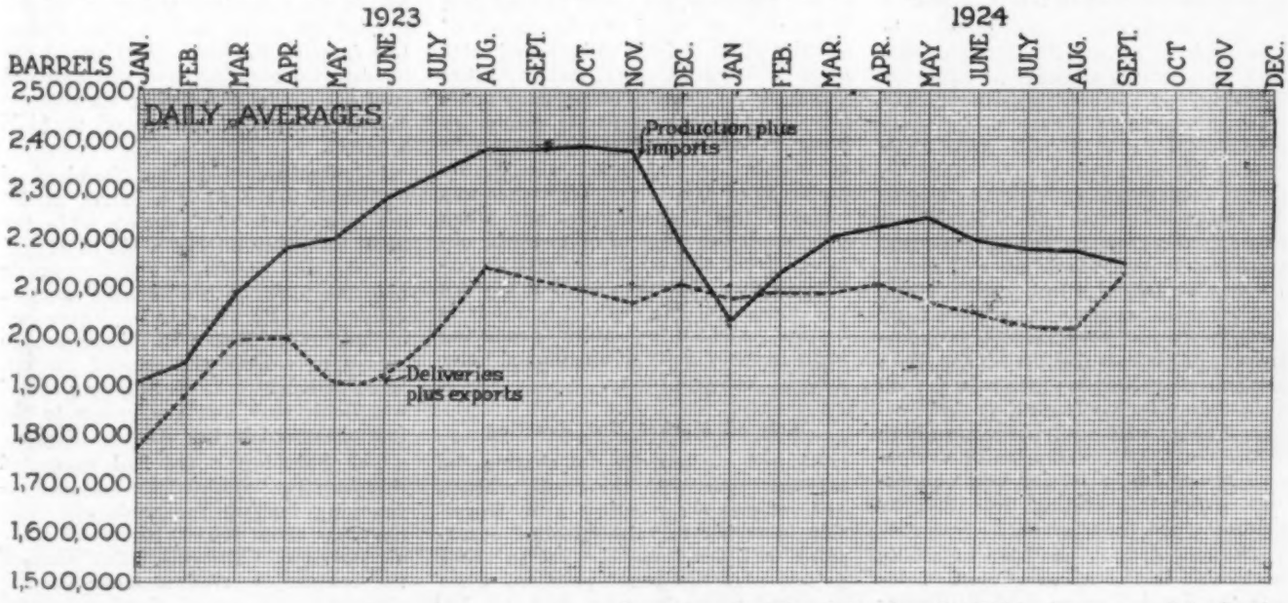
September	1,503	1,029	152	322	226,716
October	1,788	1,149	221	418	255,820



—Drawn from Statistics of Petroleum for 1924 by Department of the Interior

As the lines of this graph show, supply and demand came close together at the end of September. While demand, deliveries plus exports, likely will drop between September 30 and January 1, it is possible that the two lines will meet before that time, or early in 1925, as supply, production plus imports, is also on the wane

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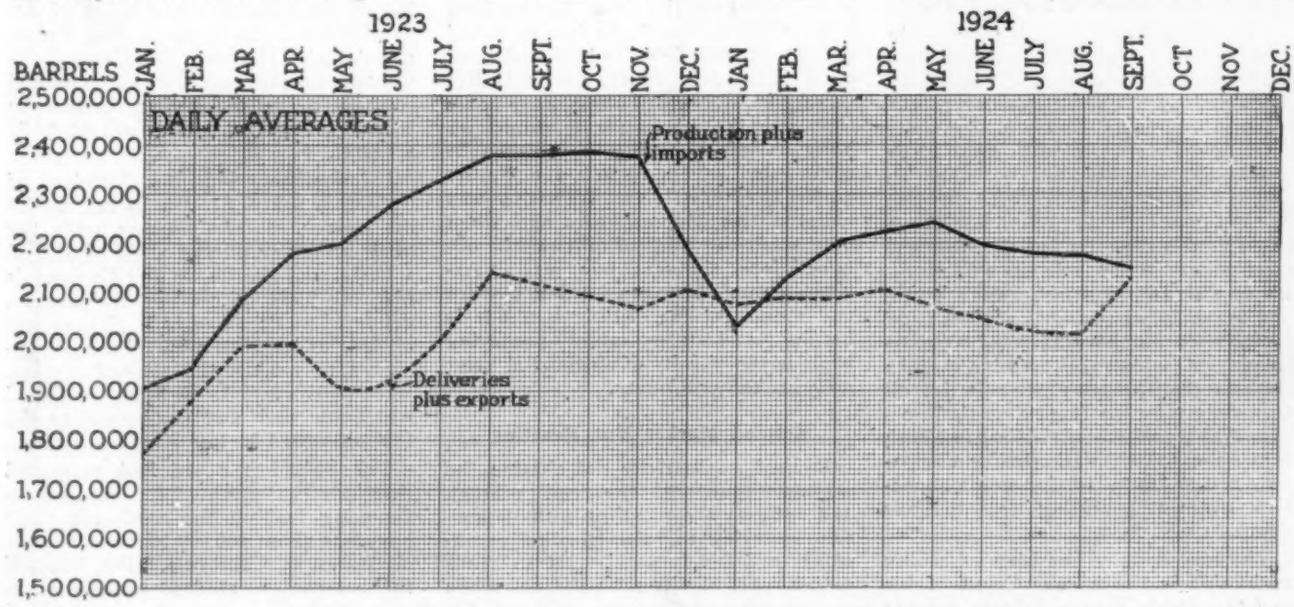
September	1,503	1,029	152	322	226,716
October	1,788	1,149	221	418	255,820



—Drawn from Statistics of Petroleum for 1924 by Department of the Interior

As the lines of this graph show, supply and demand came close together at the end of September. While demand, deliveries plus exports, likely will drop between September 30 and January 1, it is possible that the two lines will meet before that time, or early in 1925, as supply, production plus imports, is also on the wane

Crude Market Dangerously Optimistic

(Continued from page 21.)

crude other than that now being received under old contracts. It is known that the New Jersey company is not buying any crude from the Prairie at this time.

Mountain States Off

In the Rocky Mountain States the closing in of winter is slowing down operations considerably. The Texas Production Company has suspended all field work in Wyoming and some time ago the Ohio Oil Company eased up on its activity in some Montana districts. The first heavy snow fall of the year was reported in Montana Saturday and this undoubtedly is a harbinger of inclement weather to come. Production in the Rocky Mountain States is declining rapidly by reason of the natural falling off of wells in the settled areas and the closing in of winter. The fact that the gas pressure in wells in the Salt Creek field in Wyoming is easing off, as was reported this last week in press dispatches, need not be alarming any more than is the fact that the gas pressure is easing off every day elsewhere in the country and more especially in the flush areas of California and the Mid-Continent. The changing over from flowing to pumping wells has been going on in the Salt Creek field for some time and a large number of companies, including Kasoming Oil and the Mid-West Refining Company, are spending millions of dollars in equipping their leases to pump.

It is well to bear in mind that as conditions outwardly improve in the industry both in the refined and crude market stocks of finished and raw oils above ground also continue to mount upward with no real let-up now in sight.

Expect Increase in North Texas

The prospects of an early increase in crude prices in the Mid-Continent district is having a stimulating effect on drilling operations throughout the North and Central Texas fields, while producers in a position to store their crude for better prices are doing so. Crude brokers are endeavoring to buy up storage oil at small premiums above the prevailing posted price since the odds are greatly in their favor of an upward swing in prices in the near future, and the major companies are increasing their crude purchases at every opportunity. Crude solicitors have been working the North Texas district oil fields lately for Gulf and Sinclair in order to augment daily purchases of high gravity oils, and all the major companies are on the alert for new connections from test drilling near the pay depth.

The new drilling has been especially noticeable in the Archer County fields and the South Vernon field, Wilbarger County, while wildcat activity is spreading in all directions from the Big Lake field, West Texas. The Mexia and Corsicana-Powell districts offer very little additional drilling, but an entirely new producing structure is threatened from the Wortham area, which is on the Mexia fault and about midway between the Mexia and Currie fields.

The development of a new field last week in Central Archer County by Jesse Lincoln-Strong and others from a 1100-foot sand has been followed by a half dozen new locations being made, and Gulf Pipe Line Company is running seven miles of four-inch line to purchase the oil. The crest of the flush production in the Ragle district, located in the lower end of Archer County, has not yet passed, and some difficulty is being experienced in handling the oil. Humble and Texhoma are the two largest buyers in the Ragle district, while the Wichita Pipe Line Company is also handling considerable common carrier oil. Since The Texas Company has joined the ranks of the producers in this district, it is believed that Texas will build into the field with a six or four-inch extension from the Wilmott-Wilson district in upper Archer County. The Texhoma Oil and Refining Company has recently developed a large volume of business in buying crude in Archer County and delivering it to independent refiners in the Wichita Falls district at a small premium plus pipe line charges.

Although the daily production in the South Vernon field, Wilbarger County, has not yet reached a level to load any one of the four pipe lines going to the field from Wichita and Archer Counties, it has attracted a surplus of pipe line capacity while fields in the south part of Archer County are almost being overlooked by the carriers. Archer County crude is of higher gravity, and more desirable for manufacturing gasolines. However, the South Vernon field is generally accepted as a forerunner of a series of such fields to be found later on in Wilbarger County, just as Archer County is now contributing many pools from a half dozen separate producing horizons after having been thought condemned several years ago by its hundreds of dry holes. Wilbarger was believed tested some years ago when only small showings of oil could be obtained from the sand pay, just as Archer County's history goes, but modern and more efficient drilling methods is netting wildcat operators producing wells in the vicinity of abandoned holes now in Archer County.

Refined Market Not Reacting

Refined markets are not sharing the stronger tone with the crude market, and refiners are meeting with opposition in trying to raise gasoline quotations to a level more equal to crude prices, plus the usual premium when obtained from the spot market. Adverse weather conditions throughout the country during the greater part of the past week caused slackened demand for motor fuels, but kerosene and burning oils held firm.

Another Gasoline Cut

The gasoline price war in Southern California continues unabated, notwithstanding another cut of one-cent November 6. This cut was announced by the Standard Oil Company of California and only affected gasoline and engine distillates in Southern California where the market had stood at 17 cents a gallon, including the two cent tax. The new prices makes gasoline in Los Angeles and vicinity 16½ cents a gallon, which includes the tax. Other companies followed and it is understood that the price cutters have shaved the price from one-half to two cents a gallon under the large companies. There is a likelihood of the retail or service station price in Los Angeles going down to 15 cents, or maybe as low as 14 cents, including the tax. It will take a price as low as that mentioned to get under the skin of the price cutters. The two latest cuts in gasoline and engine distillates did not affect the export price.

Fuel oil continues very firm at $1.40, although there are a few instances almost every week where small refiners finding their fuel storage full, have cut the price to dump their stock. In some instances the price on a spot sale has fallen as low as $1 a barrel. But such sales are few and far between, not affecting the general market.

Fuel Contract

The U. S. Shipping Board last week awarded a contract to the Pan American Petroleum Company for 4,560,000 barrels of bunkers and fuel oil at a low bid of $1.29 a barrel, to be delivered over a year's period, starting November 1. The Pan American was the lowest bid of six submitted and most of deliveries are to be made at San Pedro, Los Angeles Harbor. The General Petroleum Corporation also was awarded contract to deliver during six months 480,000 barrels of bunker oil at $1.35 a barrel.

In submitting bids, the Standard of California asked $1.40 a barrel, as did the Associated Oil Company, while the Shell Company offered a bid of $1.37½ a barrel and the Union Oil Company's bid was $1.32 on six months' supply, delivered at Port San Luis. These fuel oil bids under $1.40 a barrel are not expected to weaken the general market, since delivery to U. S. Shipping Board was made easy and convenient to the fuel oil stored in Los Angeles Basin.

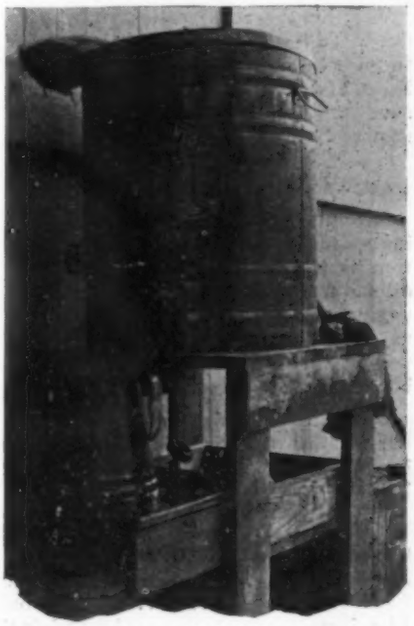
The Shipping Board had suggested that bids be submitted on basis of exchanging fuel oil for crude oil. The navy has about 800,000 barrels of crude oil stored in California. But none of the companies cared to make the exchange and none of them submitted bids on that basis.

Filters Used to Reclaim Lubricating Oils

Both commercial and home-made methods prove economical on Gulf Coast leases

By A. R. McTee
Staff Representative

WITH the widespread use of gas and crude oil engines by pipe line and oil companies, the subject of purification or the reclamation of lubricating oil is coming in for considerable attention. Involving, as it does, an item which runs into money very rapidly, the qustion has been taken up by machinists and engineers and a lot of experimenting has been done, but so far, the use of filters is limited. There are a few on the market, with localized distribution.



Stanley's homemade filter in use on the Southern Petroleum Company's lease at Humble

The purpose of this discussion is to point out some examples of what individuals have done in the way of improvising and perfecting filtering outfits. It is hoped that these instances may be of assistance in cutting down operating costs by showing how others have made a saving on lubricating oil.

One of the most scientific purifiers being used in Gulf Coast territory is manufactured by The General Machine Works, and patented by George C. Schmidt, in 1919. In reality this filter is a small refinery. Results of its work have been tested in a number of laboratories and in each instance the reclaimed oil showed a purity test of better than 99 per cent.

About 50 of Schmidt's purifiers are in use at this time: The Humble Oil & Refining Company is operating 15; The Texas Company has the same number; a few are scattered among manufacturing concerns in Houston, and the Government bought a few to use in reclaiming oil used in airship motors. Both The Texas Company and the Humble Oil & Refining Company assert that they have cut their lubricating costs very materially with this outfit, and some of the manufacturing concerns made the same statement.

Permanent Installation

The Schmidt-Orr purifier, as it is called, is constructed of galvanized iron and is made in different sizes. The seams are riveted and then soldered, making the tank oil and water tight throughout. All flanges are riveted and soldered to the tank. The cover is removable and has vents to prevent condensation. Accessibility to the treating chamber is through a removable filling funnel. All cocks are solid brass and heavily nickel plated. Valves are standard make.

This purifier is installed permanently, preferably not more than 100 feet from the source of hot water supply. Inlet valves are connected and have an opening for the hot water pipe which is one-half inch standard thread. The agitator valve is connected to a one-fourth inch standard pipe running from the steam pipe to a compressed air tank. A small gate valve drains the dirt and sediment from the treating chamber after cleansing is completed.

By referring to the accompanying cut, the following account of how dirty oil is reclaimed by the Schmidt-Orr filter will be readily understood: The valve (F) is opened and hot water, not less than 140 degrees F., is circulated through the hot water jacket. The tank cover is then removed and dirty oil is poured in until it reaches a level with the pilot cock (B). The chemical used in treating the oil is then dissolved in a bucket of hot water and poured into the filling funnel. Then the valve (G) is opened and hot water run into the treating chamber until the level of the mixture has reached about two inches from the top of the chamber. The valve (H) is then opened and compressed air is blown into the mixture, agitating it thoroughly for 10 minutes. This action washes the dirty oil and causes the chemical to work in and neutralize whatever acid might be present. The chemical also separates the free carbon and other lighter than oil particles which then sink to the bottom of the tank and are absorbed by water.

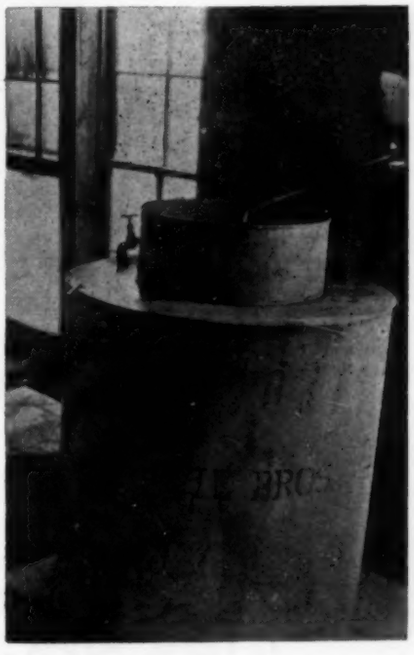
After the agitation period is over, the temperature is brought to the proper degree and the mixture is then let stand for three hours, at the end of which time a purity test can be made. A mirror is arranged so that samples of the oil may be dripped on it, and in this way it is easy to determine when the oil is clean.

According to records of the Humble Company, each of its filters will handle about 1 barrel of oil every 30 hours. Of course, the bigger the filter, the more oil that can be taken care of.

Cheaper Lubrication

Through the use of a home-made filter, the Invincible Oil Company, operating at Humble, has reduced the amount of lubricating oil it buys about 40 per cent. This statement is perhaps made more impressive by saying that before the filtering system was put into use, the company consumed 1500 gallons of lubricants every 30 days, but now its average monthly purchases do not run more than 900 gallons, at the most. The filter was installed about six months ago and the reduction in the amount of oil used followed immediately.

J. A. Haliburton, production superintendent for the Invincible at Humble, improvised the filter which was con-



Filtering tank of the Invincible Oil Company at Humble

A man is paid not for having brains but for using them

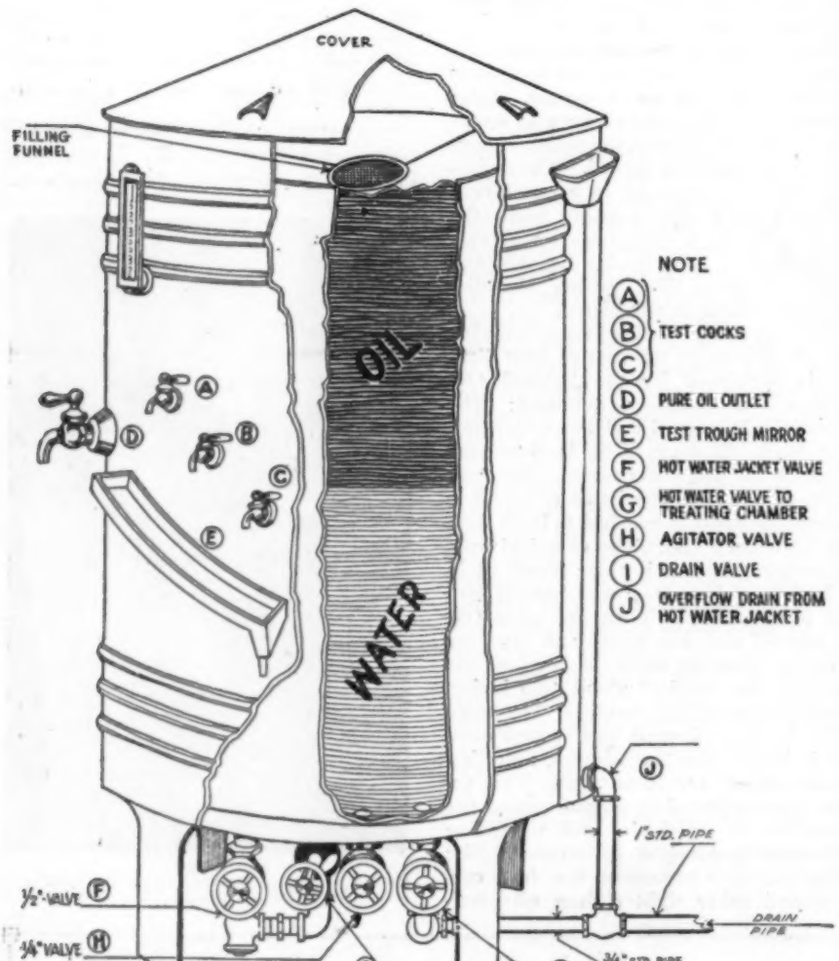
structed as follows: A galvanized tank of 100 gallons capacity was made. This tank has a big opening at the top, fitted with a rim about a foot high. The opening is covered with a very fine mesh screen wire. At the bottom of the tank are two outlet faucets, one for taking off the filtered oil, and another at a lower level for draining off impurities and settlings. Inside the tank is a steam coil provided with an intake valve for the steam on one side, and an outlet valve on the other. The coil is connected to the boiler house a short distance away by means of a steam line. Waste is placed inside the rim around the opening of the tank, about three or four inches deep.

Oil to be filtered is contained in a tank on the outside of the building. The outside tank has an outlet pipe which goes through the wall and empties into the filter. From the outlet pipe, the oil drips slowly onto the waste. This waste catches the bigger particles of dirt or whatever sediment is present. Then the oil partly cleansed seeps through the waste and goes into the tank below. When the tank is full, its contents are treated thoroughly by the steam coil. This heating thins the oil causing it to give up whatever dirt or settling not taken out by the waste. After sufficient heating, the steam is cut off and the oil allowed to cool. The clean oil is taken off when cool and is ready to be used again. Settlings in the bottom of the tank are drained out through the bottom faucet.

The Invincible lease at Humble is comparatively small. At this time ten 25 horse power crude oil engines are used for pumping, and these engines consume the greater part of the lubricating oil the company buys. Waste oil from each engine is caught in a small container and is then emptied into the tank which supplies the filter.

Somewhat the same idea as the Invincible is using has been worked out by A. Stanley, engineer in charge of the Southern Petroleum Company's property, also located at Humble, though Stanley's filter does not use steam. It consists of a five-gallon can provided with two outlet faucets at different levels near the bottom of the can. Inside the big can is a smaller one filled with waste, and provided with a small opening in the botom. A big nail acts as a valve to keep the water out and let the oil pass through. Water in the bottom of the big can comes up around the inside can about two or three inches. Oil to be filtered is poured in the inside can, soaks through the waste, then drips through the small opening into the water. As it rises through the water it is washed clean of impurities that the waste has failed to take out. The oil is then drained off through the higher faucet and the water goes out through the lower one.

The Southern Petroleum Company uses a 65 horse power crude oil engine to operate its power on the Humble lease, and it is estimated that the filter saves at least $50 per month in the cost of lubricating oil for this engine.



Diagrammatic sketch of Schmidt-Orr oil purifier

Chemical Qualities

In considering any kind of a filtering system for reclaiming oil, the question as to the quality of the reclaimed oil naturally arises. Apparently many engineers do not regard the filtered oil as fit to be used in an oil engine a second time, otherwise filtering would be much more general.

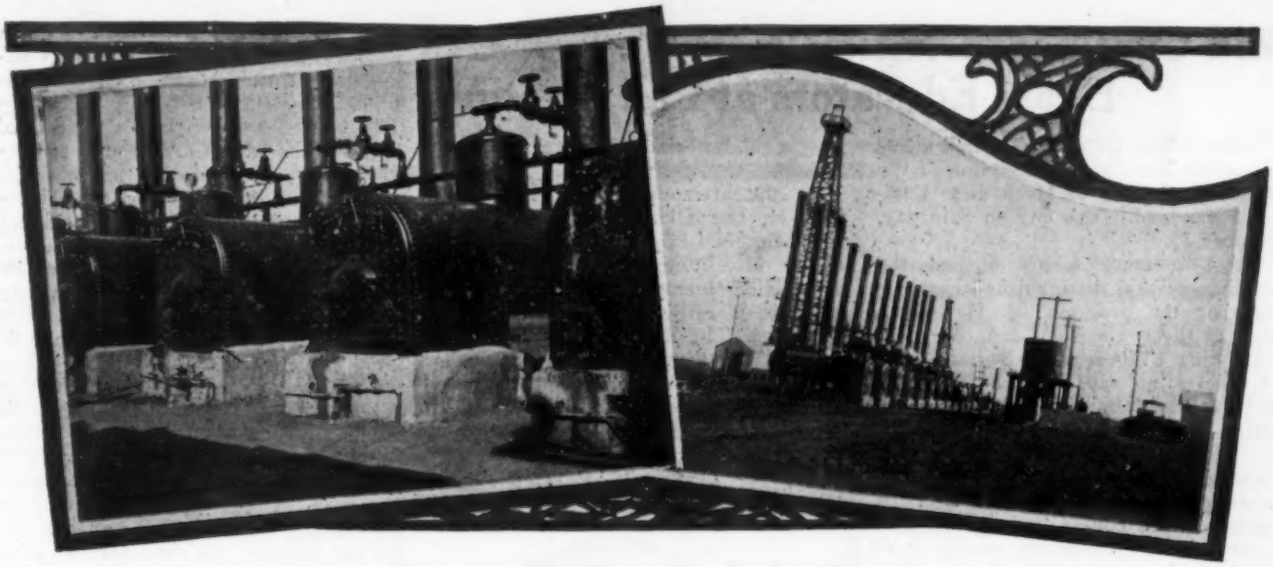
Thorough chemical analysis of oil purified in the Schmidt-Orr purifier has shown consistently the test given below:

Moisture	None
Carbon	As Original
Flash	As Original
Cold Test	As Original
Fire Test	As Original
Gravity	As Original
Viscosity	As Original
Color	Slightly Darker

Lubricating oil loses its lubricating qualities through usage very slowly Extremely high temperatures will bring about the decomposition of lubricants, but these temperatures never occur about the bearings of an engine. David T. Day, in his Handbook of the Petroleum Industry, has the following to say about the effect of heat on lubricating oil: "Temperature is destructive to lubricating oils. Mineral oils decompose rapidly at high temperatures, just in excess of 600 degrees F., and oxidize (thicken) slowly at temperatures below 600 degrees. The longer the exposure to heat, the greater the destruction or oxidation."

The value of lubricating oil rests largely on its viscosity at the working temperature of the engine, and this temperature outside the cylinder has been proven to be less than the boiling point of water. Hence there could not be any decomposition of the lubricant through temperature.

R. S. Ellison, vice-president, and A. W. Peake, superintendent of operations for the Midwest Refining Company, have returned to company offices in Denver after an inspection trip through Colorado, New Mexico and Utah.



Left—Boiler installations on Associated Oil lease at Rosecrans, showing concrete and brick foundations, with both gas and oil lines for fuel. Right—A dozen boilers in a battery, ready for drilling

Associated Puts Its Boilers Up to Stay

Brick foundations and double fuel lines found on Dominguez field lease

By W. E. Green
Staff Representative

THE boiler plants of the Associated Oil Company on the company's DeFrancis 50 acre lease in the southeast part of the Dominguez field in Los Angeles County, Calif., are almost the last word in installation, promising more power than can be needed.

One station had nine boilers up and two more being set when accompanying pictures were taken, while the other station had twelve boilers up and ready to go, with fires under several of them. Arrangements for the steam plants had been made when it was expected that twelve wells would be drilled upon the tract, all to be going at one time. Since that time, the number of wells to be drilled has been reduced to six.

The boilers in use are the oil field locomotive type manufactured and sold by the Oil Well Supply Company, being rated at 70 horse power. It will be noted from the illustration that the fire boxes rest upon cement and brick foundations, the installations being permanent in nature. The boilers have been placed as close together as possible and natural gas is being used as fuel. These boilers are equipped with double safety valves, hid by the dome in the pictures.

In one of the pictures can be seen the foundations for the fire boxes, which are lined with fire brick. Two pipe connections can also be noted. One pipe is for fuel oil while the other is for gas. The burner in use is called the Bullum external atomizing burner, made and sold by the Dazey Manufacturing Company, 839 East 31st St., Los Angeles, Calif. It is claimed that it gives maximum heat with a minimum amount of fuel.

The Bullum burner is said to be most simple in construction, is practically fool proof and a change can be made from fuel oil to gas, or back again, without removing the burner from its place. The accompanying illustration shows the burner using fuel oil, and when gas is used, the gas comes through the opening used for steam or air when using fuel oil. If the line pressure of the gas is as high as 15 pounds, no additional force is needed, but if the pressure falls below that point, it is necessary to use either steam or air as an atomizer.

At one test made at another plant, it was found that one of these burners under a larger boiler than those used by the Associated consumed 724,000 cubic feet of gas in four days of 24 hours each. This gives some idea of the quantity of gas used under the ordinary boiler. One of these burners will heat any size boiler up to 125 horse power. The spread of the flame in the fire box can be regulated by either raising or lowering the burner. The burner is inexpensive, is easily attached and removed, seldom gets out of fix and is handy to ship or move about.

Type of burner used in the boilers

Russian Petroleum Products Being Delivered to Germans

Washington, D. C., Nov. 10.—Deliveries of Russian petroleum products to the German Petrol Company, under an agreement recently made, have been commenced by the Russian Naphtha Syndicate, the Department of Commerce has been advised by the commercial attache at Copenhagen. One steamer load of 7,500 tons of petroleum has already been received at Hamburg, and another is expected in the near future.

The German Petrol Company, according to reports, has been authorized to sell these products to the Scandinavian countries under the Russian trade mark, and negotiations to this end are now going on with the Scandinavian states.

Two Rosecrans Tests Showing

Los Angeles, Calif., Nov. 10.—The Rosecrans field is about to upset all of the dope. Union's No. 4 Rosecrans today had declined to about 1500 barrels daily. E. J. Miley's Athens No. 1, 2500 feet northwest of Union's Athens 1, has 40 feet of good oil sand at 4940 feet and is cementing string. Union's Trust 1, 2300 feet southwest of Union's Athens 1, has found an oil sand at 5763 feet, while General Petroleum takes the prize with an oil sand at 5985 feet in its Amstoy 1, which offsets to the west Union's Trust 1.

Mid-Continent Division A. S. M. E. Hears Educators at Fall Meeting

Tulsa, Okla., Oct. 27.—The fall meeting of the Mid-Continent section of the American Society of Mechanical Engineers was held in this city on Saturday, October 25.

At a meeting which opened the meeting, several distinguished speakers were on the program. J. H. Felgar, dean of the engineering department of Oklahoma University at Norman gave an interesting talk on the university and expressed the desire of that institution to co-operate with the A. S. M. E. Mid-Continent Division. H. C. George, dean of the petroleum engineering department of the university, explained the course under his supervision. P. A. Cushman, professor of mechanical engineering at the University of Arkansas was also a speaker at the luncheon.

In a report made by the organization committee of the petroleum division of the A. S. M. E., Hollis P. Porter, acting chairman of the committee, said that 164 members of the association had replied to a questionnaire sent out by him in an effort to classify the engineers who were directly connected with the oil industry.

The urgent need of co-operation of the A. S. M. E. with other associations in an effort to analyze difficult problems of the oil industry is what prompted the organization of the petroleum division of the association. At the present time, the classification of members connected with oil industry is as follows: Producing, 31 members; transportation, 19; refining, 53; marketing, 9; lubrication, 7; distribution, 7; and general, 58.

After a permanent chairman had been elected for the petroleum division, a chairman for each of these branches will be appointed. These chairmen will work in conjunction with outside associations and committees pertaining to problems confronting their branch of the industry.

The organization committee, composed of Hollis P. Porter of the Gypsy Oil Company, L. E. G. Begnell of the Parkersburg Rig and Reel Company, and Howard A. Aureswald of the Gypsy Oil Company, in their questionnaire have asked the members to suggest work to be done by these different divisions. Some of the suggestions which were received were as follows:

"Research on refining equipment."

"Standardization of equipment in general."

"Research on increase of recovery from abandoned wells."

"Drilling equipment standardization."

"Corrosion of tubes in heat exchangers."

"Fire prevention in relation to the oil business."

"Research on heat exchange in gasoline plants and refineries."

"Methods of pumping oil from wells, gas regulator sizes for pressure and volumes."

At the afternoon business session, held in the Oklahoma Natural Gas Company hall, E. A. Clark, President of the Mid-Continent Division of the association, introduced J. O. Lewis as a speaker for the meeting. Lewis spoke on "The Recovery of Oil by the Smith Dunn Process". An address was also made by E. O. Bennett, Natural Gas Engineer of the U. S. Bureau of Mines, Bartlesville station, the subject being "Testing High Pressure Gas Lines for Leakage". E. L. Rawlins of the Natural Gas Association of America was also a speaker.

Prairie Employes Benefit Under Stock Increase Plan

Independence, Kans., Nov. 8.—Prefacing the announcement with a statement that the company does not contemplate any large expansion plan nor a change in its business, the Prairie Oil & Gas Company stockholders have been called to meet here December 9 to vote on a proposal to increase the company's capital stock from $60,000,000 to $70,000,000 and to reduce the par value of the stock from $100 to $25 a share.

The increase in stock is primarily intended to enable the company to institute a stock-owning plan among its employes and at the same time to encourage thrift among them. Of the additional stock, $5,000,000 will be held in the company treasury in anticipation of future needs and the remaining $5,000,000 will be available for purchase by employes of the Prairie in accordance with a plan to be devised by the board of directors.

In connection with the proposed increase in stock, an official statement by the company is: "These proposals do not mean that the directors have in mind any change in the company's business, or any important expansion other than probable continued increase in stocks of crude oil by reason of overproduction in the Mid-Continent field. It is the judgment of the company's management that present conditions and future prospects for our business do not warrant the expectation of immediate increase in the earnings or dividends but, on the contrary, it may become necessary to temporarily reduce or discontinue dividends until the oil industry shall have made progress in recovery from existing depression."

Oil Well in France

New York, N. Y., Nov. 10.—Cable dispatches from Paris report the completion of a 175-barrel well drilled under government license near Gabian in the department of Herault in southern France. The oil came in with an intermittent flow averaging about a cubic meter an hour.

Tax Returns Show Little Change in Oklahoma Output for Third Quarter

Oklahoma City, Okla., Nov. 11.—Oklahoma production for the third quarter of 1924 reached 39,728,370 barrels, 375,273 barrels more than the second quarter total of 39,353,097 barrels.

The output of the deep sand at Tonkawa and the drilling of the Cromwell pool were responsible for the continued high output for the State.

The Gypsy Oil Company led all concerns for the quarter, with 3,347,579 barrels. This company has held the commanding place in Oklahoma production for the three quarters of the year.

The Skelly Oil Company moved into second place for the third period, a jump of two notches, as this company was in fourth place for the second period.

Although Oklahoma production reached its highest daily average during the third quarter, 546,000 barrels daily, the total for the whole period is not equal to some other periods for the state. For the second period of 1923, Oklahoma had total production of 44,749,630 barrels and the third quarter of that year the total was 40,249,817 barrels.

Detailed figures for the third quarter will be printed in the next issue of The OIL WEEKLY.

The Million Barrel Class

Company—	Third-Quar. 1924	Second Quar. 1924	First Quar. 1924
Gypsy Oil Company	3,347,579	2,986,789	3,023,775
Skelly Oil Company	1,993,480	1,905,614	2,192,953
Carter Oil Company	1,927,532	1,879,769	2,066,552
Comar Oil Company	1,717,314	2,007,664	2,199,676
Phillips Petroleum Company	1,715,795	2,974,475	2,936,399
Prairie Oil & Gas Company	1,713,621	1,601,535	1,477,295
Magnolia Petroleum Company	1,706,880	1,645,714	1,602,302
Sinclair O. & G. Company	1,419,193	1,468,563	1,481,306
Roxana Petroleum Corporation	1,121,480	1,126,140	845,253
	16,662,874		
Remaining production	23,065,496		
Total third quarter	39,728,370		
Total second quarter	39,353,097		
Total first quarter	36,127,655		

PERSONAL MENTION-MEN YOU KNOW

In the death of Isaac Canfield, 85 years old, at Grand Junction, Colorado, last week the driller of the state's first oil well in the old Florence field passed away. Coming to Colorado in 1871 Mr. Canfield afterwards engaged in coal mining at Coal Creek near Florence and it was there that he encountered oil in 1878.

R. E. Carmichael, who drilled many of the sulphur wells at Sulphur, La., and who was well known in Texas and the Gulf Coast oil circles, was killed in an automobile accident at Rio Bravo curve on the Bakersfield-McKittrick highway in California late in October. R. E. Cloud was with him at the time and also met death.

William B. Rowland, for the past eleven years manager of the Bakersfield Iron Works at Bakersfield, Calif., died October 8. The Bakersfield Iron Works is a subsidiary of the Associated Oil Company, and Mr. Rowland started with the company in 1900 as a storehouse employe of the iron works, progressing steadily until he reached the manager's chair.

Messrs. J. E. Swindler and J. L. Shakely of Frick-Reid Supply Company, Tulsa, left Tuesday for a business conference at Pittsburgh, Pennsylvania.

A. C. McLaughlin, vice-president of the Associated and Pacific Oil Companies, headquarters at San Francisco, spent considerable time in Los Angeles the past two weeks.

Announcement has been made of the affiliation of S. E. Adair, Jr., and Russell V. Johnson, geologists, under the firm name of Johnson and Adair, with offices in the Finch building, Aberdeen, Washington.

During the season just past both Mr. Adair and Mr. Johnson have been assisting Dorsey Hager, well-known geologist, in his examination of geological conditions in Western Washington. Mr. Johnson has been engaged in consulting work in Montana for the past four years, and Mr. Adair was formerly employed by the Dutch Shell Company.

The personnel of the Rycade Oil Corporation's geological staff has been augmented by the recent addition of Frank Krey and Arlington Waggoner.

J. R. Latimer of the drilling contracting firm of Latimer and Devore of Fort Worth was a business visitor in Tulsa early this week.

C. J. WRIGHTSMAN
of Tulsa, Oklahoma, president of the Wrightsman Petroleum Company

—Photo by Krupnick, Tulsa

Festus J. Wade of St. Louis has been elected a director of the Roxana Petroleum Corporation, a subsidiary of the Shell Union Oil Corporation. He also is a director of the Ozark Pipe Line Company and the Wolverine Oil Company, both Roxana subsidiaries.

H. B. Pyle, who formerly represented the Sinclair Crude Oil Purchasing Company in the El Dorado, Kansas, district, has been transferred to Wichita Falls as a special representative of the company in the North Texas district.

A. J. Carr, vice president of the American Seamless Tube Company, headquarters at Los Angeles, and who sells Lufkin Foundry goods in California, is making arrangements to attend the annual meeting of the American Petroleum Institute at Fort Worth in December.

Charlie Wagner, the genial sales manager of Axelson Machine Company, headquarters at Los Angeles, is back at his desk after attending the Exposition at Tulsa and touring most of the oil country of the United States.

A. E. Wallace, representative of the Gulf Oil Corporation in California, headquarters at Los Angeles, is playing the bachelor game these days, since the departure of his wife and child November 5 for Tulsa to spend two months with home folks. Mr. Wallace started out for a tour of the Kern county fields the day after his wife left.

J. S. Connelly, sales manager, Petroleum Iron Works, with headquarters in Sharon, Pennsylvania, was on a business trip recently, which included points in Texas, Oklahoma, and Missouri.

J. A. Phillips, who has been drilling wells in North Texas most of the time the past four years, is in Los Angeles on a visit and looking over the California fields. His family resides in Hollywood and he may decide to stay in California, if things line up right.

D. M. Cashen, formerly manager of the Southern Exploration Company and connected with the Humble Oil and Refining Company for four years, sold out his interest in the Southern Exploration Company and, starting November 6, became associated with the Farrish, Watts and Collins Company. Mr. Cashen, who was one of the Southern Exploration Company organizers, also is connected with the F. W. C. Royalty Company. He is well known among Coastal oil men.

Before a man "has it in him," usually he has had to strive hard to put it there.

Placing of Mud Pump On Rig Important

Location as well as proper treatment plays big part in operating efficiency obtained

By Harry Pennington
Mechanical Engineer

A driller once said that mud pumps could cut more antics than a circus mule. And to beat them makes them all the worse. The accompanying article simplifies the drilling pump, outlines the pressures obtainable, describes the proper method of handling and defines the limitations of this special class of pump.

Mr. Pennington, the author, has had considerable experience in the designing and building of this kind of pump as well as practical experience in their operation on the derrick floor and this discussion should prove of special interest to all those engaged in work pertaining to the drilling of wells.—The Editor.

THE water end of the slush pump is highly specialized for the particular work of pumping mud laden fluid; the liners may be removed and renewed; the valves are especially adapted to the work; the water and pistons are equipped with especially adaptable packing; each valve has its own chamber and cover plate, but the steam end conforms to general duplex direct acting steam pump practice.

The work done by a drilling pump may be computed. Taking a 10x6x12-inch operating at thirty revolutions per minute, against say seventy-five pounds pressure, the piston must exert a force to draw in water and to overcome the discharge pressure. This force required to be overcome is termed the plunger load and is expressed in pounds.

The area of the piston is 28.27 square inches and 75 pounds pressure per square inch against 28.27 square inches equals a total plunger load of 2120 pounds, which is the stress that the piston rod bears at each stroke. The stroke being twelve inches, or one foot, the product of 2120x1 equals 2120 foot pounds per stroke; being double acting and duplex, 2120x4x30 equals 254,400 foot pounds, which divided by 33,000 foot pounds, results in 7.7 actual horsepower developed by the water end.

Thus, the drilling pump does not perform any great amount of work, although a large quantity of steam is used.

The mechanical efficiency of the drilling pump in fair condition, ranges around 70 per cent in the 12-inch stroke size, which divided into 7.7 horsepower gives 11 horsepower that the steam cylinders must perform to actuate the pistons. And, as seen, the plunger load being 2120 pounds, the same divided by 70 per cent results in 3017 pounds force that the steam piston must exert to actuate the plunger, which is termed the plunger effort.

The plunger effort is proportional to the plunger load plus friction; where the speed is the same, the friction load is the same almost, there being little change in the friction load whether the pressure is high or low, that is, in the quantity of power required to overcome the pump friction. Then, if the mechanical friction is 30 per cent, at 75 pounds, it follows that at 150 pounds discharge pressure, the percentage of friction load to horsepower developed is less, making the mechanical efficiency higher at the higher pressure.

Overcoming Plunger Load

To overcome the plunger load, the steam piston must develop sufficient force; the 10-inch diameter steam cylinder has a steam piston area of 78.54 square inches and, if the total plunger load is 3017 pounds, the average steam pressure throughout the stroke must be 38.4 pounds. The throttle valve then cannot be opened wide or the pump would gather more speed and increase the discharge pressure over 75 pounds.

The proportion of water cylinder to steam cylinder governs the maximum working pressure of the pump. The area of the water piston being 28.27 square inches and of the steam piston 78.54 square inches, the proportion is 1 to 2.77, or the steam piston area is 2.77 times that of the water piston area. If the steam pressure is 100 pounds in the steam cylinder, the plunger effort is 78.54 times 100 or 7854 pounds total. And dividing the water piston area of 28.27 square inches into 7854, we obatin the maximum pressure which the pump can set up, equalling 277 pounds, and 277 pounds is therefore the shut off pressure, which is the pressure generated by the pump with the discharge valve closed and full steam pressure turned into the cylinder. It makes no difference whether one or both pistons is exerting pressure, this is the maximum shut off pressure.

Finding Shut-off Pressure

A simple method of obtaining the shut off pressure of a pump is to ascertain the areas of the water and steam pistons, divide the water piston area into that of the steam piston area, and multiply by the boiler steam pressure. The simplest method is to square the steam piston diameter, and divide by the square of the water piston diameter, which obtains the cylinder ratios, then multiply by the steam pressure as before.

If 5-inch liners are used, the shut off pressure becomes 400 pounds, with 100 pounds boiler pressure and 500 pounds with 125 pounds steam pressure.

Using the 12x7x14-inch drilling pump, with 5-inch liners, the shut off pressure with 125 pounds steam is 576 pounds.

It is well to understand just what the drilling pump being used will do, since these may be called upon for m u d d i n g operations against gas pressure, cementing against pressure, testing seats and the like and it is simply a matter of looking at the steam gauge and calculating the cylinder ratio to determine the pressure the pump is generating, when the pressure is so much as to stop the pistons. But, since the steam piston must overcome the water cylinder pressure, and friction also, it follows that a duplex direct acting steam pump will not operate at its shut off pressure, because some of the steam cylinder power is used to overcome the friction load. If the friction is 30 per cent, the maximum working pressure will be 30 per cent less than shut off pressure.

The pressure against which the pump will operate depends, as we have seen upon the cylinder ratio; then, to increase the size of the pump, without increasing the cylinder ratio does not mean that the larger pump will generate more shut off pressure or operate at a greater pressure.

The 12x7x14-inch pump with 100 pounds steam pressure, has a cylinder ratio of 2.94, consequently a shut off pressure of 294 pounds and a working pressure, maximum, of about 225 pounds.

Larger Pumps

The larger size pump does operate at greater pressure in well drilling, however, due to the larger quantity of fluid circulated. When more fluid is circulated down through the drill pipe and back up the hole, the friction increases about as the square of the velocity, consequently the larger pump always operates at more pressure in the same size hole.

Not only has the larger pump the advantage of circulating more fluid, but when the liners are reduced to 5-inch,

the working pressure is much higher, if such is required for any particular work demanding pressure.

While drilling pumps are not fitted with long suction pipes, and the suction lift is not great, still the pump must lift heavy mud when necessary, and the suction becomes of importance as well as the ability of the pump to handle fluids that are viscous and that move slowly.

Theoretically, a pump will lift water nearly 34 feet, (14.7x2.309 equals 33.9) at sea level, but since there are various air leaks always present, either in the piping, fittings, or stuffing boxes, and there is always some air in the fluid being handled, 20 to 25 feet is a fair suction lift. When heavy mud is handled, the vacuum on the suction pipe is greater than with lighter fluid, consequently, unless the pump has tight fittings on the suction side, it will be limited in the specific gravity of mud handled. When a suction lift equal to more than 25 feet, equalling 25 inches of vacuum, is necessary to handle heavy mud the average drilling pump begins to break in the suction.

Removing Suction Load

When this occurs, and it is necessary to handle as heavy or even heavier mud, the pump may be set down level with the pit to insure that the vacuum on the suction will not break. As shown in Figure No. 1, the pumps are set on an extension built at the ground level instead of at derrick floor level. It usually occurs that heavy mud is required for high pressure wells and the derricks for such wells must be elevated to get the Christmas tree underneath the floor and in such case, the pump must be set down at ground level in order to pick up the heavy mud.

In a 12-inch stroke pump, with an average setting above the pit level, with one length of pipe for suction, tightly made up, the pump will begin to hammer at about 40 revolutions per minute. Forty revolutions corresponds to a piston speed of 80 feet per minute, which is below the normal working piston speed of a pump this size.

When the water cylinder is filling, the water column in the suction pipe must gather speed to travel in; when the stroke is completed, the water column in the suction pipe must slow down to zero velocity for that piston; and since there are four strokes per revolution, and the strokes are in sequence, the suction water column is started, accelerated and stopped four times in each revolution. To start the column moving, the vacuum is highest, which is at the beginning of the stroke; and after the column is started, the vacuum declines toward the end of the stroke and becomes positive when the stroke ends. This occurs because the drilling pump has never been fitted with a suction air chamber.

Hammering

This hammering must be distinguished between valve slam causing hammer. Hammer due to suction is caused by the water column in the suction parting, and to the valves lifting too high. In the case of the suction column parting, or cavitation, the cylinder will not fill completely on one stroke, and on the return stroke, the piston strikes the fluid and causes hammer. Reducing the speed will usually reduce this hammering, but at the expense of capacity. By closing all suction air leaks, including the tightening or replacing of the water end piston rod packing, to exclude all air from whatever source, some of this hammer may be removed, although, when the suction vacuum is high, air will be drawn out of the mud fluid, which is not preventable, except by lowering the pumps closer to the level of fluid in the pit.

When the derrick is raised up high, the suction lift is greater than usual as shown in drawing No. 1, but setting the pumps down lower removes some of the difficulty. When handling the heaviest mud, and when pumping iron oxide or iron ore, to subdue gas pressure, the pump will not operate satisfactorily when set high and there must be a pump floor set down to the pit level as shown in this figure.

Hammering, due to valves slamming, is usually caused by leaving out the valve springs, and by the valve being allowed to lift too high. The stop arrangement above the valves should positively limit the valve lift, whether the valves are large or small, since it is the height of lift, rather than the diameter of valve that causes valves to slam. Slamming valves wear out more quickly than valves that seat quietly and the practice of leaving out the valve springs tends to wear the valves. The lift of valves should not be more than 5/16-inch to 3/4-inch, though the fluid must travel through the valve more quickly, this limit to the valve lift is necessary for smooth operation.

While the suction air chamber permits of smoother operation and better filling of the cylinders, it has not made its appearance in the field.

Valve Areas

The practice of using large percentages of valve areas for handling heavy fluids so as to reduce the speed of fluid traveling through the valve seat is not magnified as generally supposed in the usual drilling pump; as a matter of fact, the pump will handle a greater quantity of the same mud fluid, with large valve areas than with small, because the speed through the valves is less with the larger valve areas. The pump speed is limited more by valve areas than by weight of mud fluid. Valve areas of average drilling pumps range from 25 to 40 per cent. When the clear opening through the valve seat measures 3 inches and the piston diameter is 6 inches, the valve area is 25 per cent, this area being expressed as the proportion between the clear valve opening and the piston diameter. Where the valve area is 33⅓ per cent when the 12-inch stroke pump is operated at 40 revolutions per minute, corresponding to a piston speed of 80 lineal feet per minute, the mud fluid is drawn into the piston at a lineal travel of 80 feet per minute in the water end cylinder, but, to pass through the valve, the speed must be three times eighty, or 240 feet per minute, or four feet per second. In general pump practice, the travel through the valve cannot be greater than this, which limits the speed at which the pump, or any pump, may run and not hammer. The express pump, used for de-watering mines runs at high speed, obtained

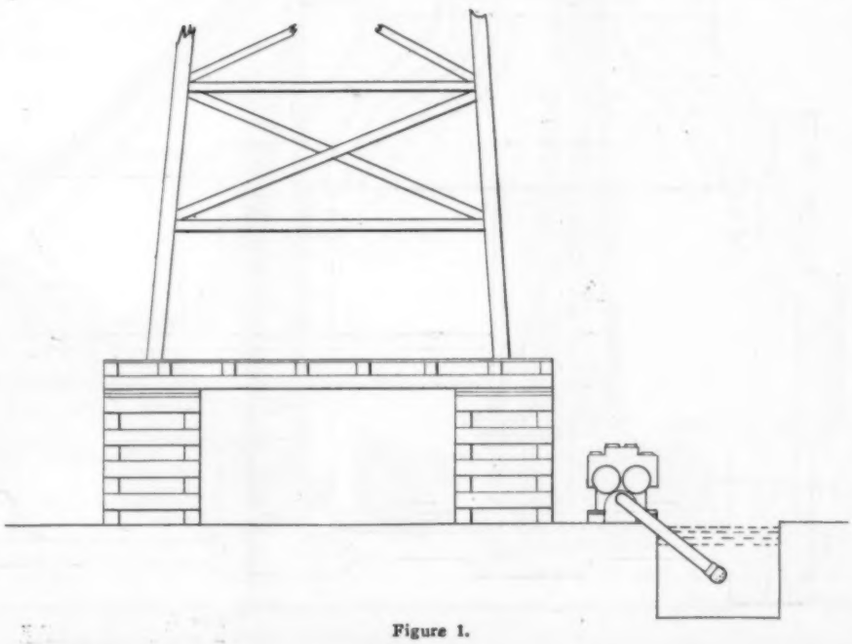


Figure 1.

by making the valve areas more nearly equal to the piston area. If the drilling pump had valve area of 75 per cent, the speed could be easilly increased to 60 or 70 revolutions per minute, even with moderately heavy mud. The writer has some pumps now that operate at speeds up to 110 revolutions per minute and that begin to hammer at 115, in which pumps the valves are made much larger than the average. The result is that the pumps are very small when compared on the basis of weight, but the delivery is about the same as the larger drilling pump with the smaller valve areas. And, since this class of pump must be moved about, and the average drilling pump is always too small anyway, a water end with larger valve areas would serve equally as well as a larger pump.

There are some objections, however, but these are not of major importance. The life of any reciprocating mechanism is proportional to the number of reversals, rather than to the piston speed; the smaller pump, running at a greater number of revlutions per minute, will require more renewals, but the renewals are smaller and cost less, so that the repair items are not greater in cost over a period of operation.

Duplex Pumps

Duplex direct acting pumps take steam during the full length of stroke, without expansion of the steam, hence the term direct acting as applied to this class of pump. Instead of expanding within the cylinder and doing work by such expansion, as in the cylinder of the drilling engine with its flywheel, the direct acting pump takes steam at the same pressure throughout the stroke, the pressure being controlled by the throttle valve. Consequently, the steam consumption of the pump is much greater per horsepower than the steam consumption of the engine. An average rate of steam consumption of the drilling pump is 125 pounds of steam per horsepower hour; the 10x6x12-inch uses more and the 12x7x14-inch somewhat less. The steam rates vary also with the condition of the pump.

Then, with the 12-inch stroke pump developing twelve indicated horsepower, the steam consumption is 1500 pounds per hour, requiring about 50 boiler horsepower to furnish steam; when the pressure against which the pump is working increases, of course the steam consumption increases. The pump always takes more steam than the drilling engine while drilling, although the drilling engine may be doing more work. When the pump is shut off to come out of the hole, one boiler may be cut out at times, even though the drilling engine has five or six times the work to do.

Steam consumption of drilling pumps varying with the working pressure of mud fluid, it follows that the steam used varies widely; the pump will have very little pressure when the hole is shallow and in soft formations; as the hole deepens, the working pressure of mud fluid increases, as is natural; drilling in rock, the pressure is lower than in shale; and shale drilling pressure is lower than clay and gumbo, or gummy lime.

Formations Affect Pressure

This leads to a classification of drilling according to pressure requirements; the hole is clear when drilling in rock or any formation that cuts into fragments that are flushed out whole, and that do not fill the hole around and above the bit. But clay, gumbo and gummy lime, ball up, closing the bore hole above the bit and about the two water courses, causing the pressure to rise immediately. An example of gummy lime is the top of the Austin chalk in some localities, which balls up like gumbo, and, as a matter of fact, might be classed as gumbo, mechanically speaking.

The indications of formation changes as denoted by the pump action are as distinct as any other indications, including the denotations of the rotary. When the bit is balled up, it will stick, then give way and spin around, then stick again and spin around upon loosening, exactly like rock, except that the pump will labor due to the water courses being partially closed, while in rock, the pump runs freely and smoothly at lower pressure. While the exhaust is used as an indication, still, a pressure gauge connected to the

(Continued on page 39.)

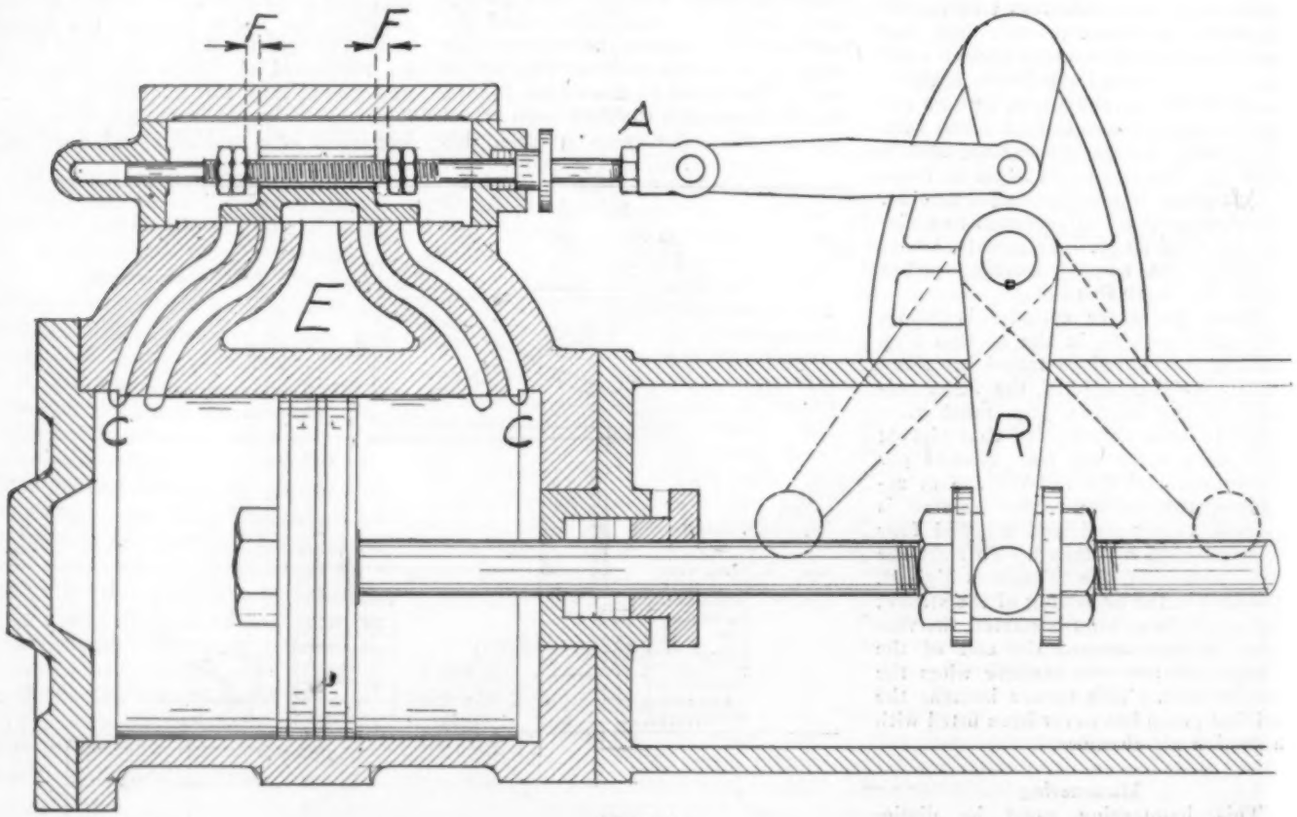
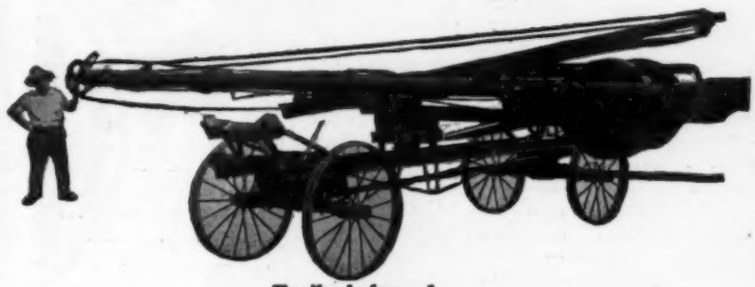


Figure 2.

Why Stretch Your Neck?

Men who are working on a short masted pulling machine, and forced to keep one eye below and the other trained on the crown pulley to keep the tubing hook clear, are at a disadvantage. They are fearful of their own safety and cannot give the job the speed and careful consideration it merits if the cause were removed.

Hitch on. Let's go.



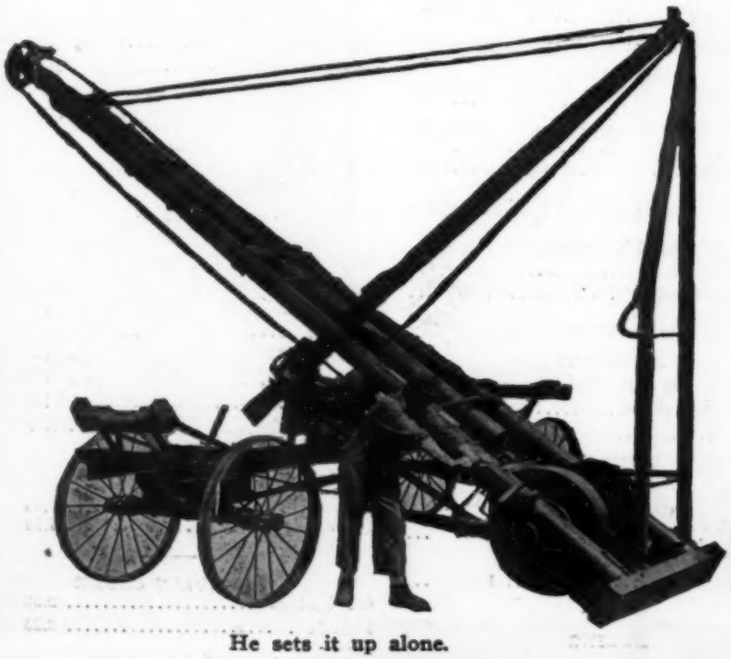
Easily balanced.

Room To Spare Above

With an IRON KING, whose crown pulley towers forty feet above the ground when fully extended, the workman is assured of plenty of room and can give his entire attention to his elevators and wrenches. Why work at a disadvantage?

If your oil well supply store will not get you an IRON KING write us direct. Tell us where to send you a catalog.

Iron King Manufacturing Co.
Bradner — Ohio



He sets it up alone.

Ready to pull.

CRUDE OIL PRICE QUOTATIONS FOR ALL FIELDS

Crude Price Changes

Houston, Texas, Nov. 6.—Effective at 7:00 this morning the Gulf Pipe Line Company posted an advance of 25 cents on grade A, and 20 cents on grade B, Gulf Coast crude.

This posting was met by all the major purchasing companies.

Current Postings

EASTERN STATES

	Nov. 14 1924	Nov. 14 1923
New York Transit	$2.85	$2.60
Bradford (Pa.)	2.85	2.60
Cabel	2.75	2.35
Other Pa. Grades	2.75	2.50
Ragland	.90	.75
Corning	1.50	1.45
Somerset, medium	1.55	1.15
Somerset, light	1.70	1.30

CENTRAL STATES

Illinois	$1.37	$1.22
Indiana	1.38	1.23
North Lima	1.58	1.43
South Lima	1.58	1.43
Plymouth	.75	.60
Princeton	1.37	1.22
Waterloo	.75	.70
Wooster	1.40	1.25

WESTERN KENTUCKY

Posted by Indian Refining Company for crude from Allen, Warren, Franklin, Davies, Barren, Cumberland and Monroe Counties

36 and above	1.40	...
33 to 35.9	1.30	...
32.9 and below	1.20	...

CALIFORNIA

(Crude oil prices at well)

Los Angeles and Orange Counties

14 to 19.9 gravity	$1.00	$ .60
20 to 20.9 gravity	1.01	.61
21 to 21.9 gravity	1.02	.62
22 to 22.9 gravity	1.03	.63
23 to 23.9 gravity	1.05	.64
24 to 24.9 gravity	1.07	.65
25 to 25.9 gravity	1.10	.66
26 to 26.9 gravity	1.13	.67
27 to 27.9 gravity	1.16	.68
28 to 28.9 gravity	1.19	.69
29 to 29.9 gravity	1.22	.70
30 to 30.9 gravity	1.25	.71
31 to 31.9 gravity	1.28	.72
32 to 32.9 gravity	1.31	.73
33 to 33.9 gravity	1.34	.74
34 to 34.9 gravity	1.37	.75
35 gravity and above	1.40	.76
Fuel Oil	1.40	...

Rosecrans Field

36 to 36.9 gravity	$1.46
37 to 37.9 gravity	1.52
38 to 38.9 gravity	1.58
39 to 39.9 gravity	1.64
40 to 40.9 gravity	1.70
41 to 41.9 gravity	1.76
42 and above	1.82

MID-CONTINENT

(Prairie Prices)

Below 30 gravity	$ .75	$ ...
30 to 32.9 gravity	.90	...
33 to 35.9 gravity	1.10	...
36 and above	1.25	...

	Nov. 14 1924	Nov. 14 1923

(Sinclair Prices)

Below 30 gravity	.75	...
30 to 32.9 gravity	.90	...
33 to 35.9 gravity	1.10	...
36 and above	1.25	...

(Texas Company Prices)

Below 30 gravity	.75	...
30 to 32.9 gravity	.90	1.25
33 to 35.9 gravity	1.10	1.50
36 and above	1.25	...

(Magnolia Petroleum Co.)

Below 30 gravity	.75	...
30 to 32.9 gravity	.90	...
33 and above	1.25	...
Corsicana, light	1.25	...
Corsicana, heavy (at wells)	.90	...
Mexia	1.25	...
Thrall	1.00	...

NORTH CENTRAL TEXAS

(Humble Oil & Refining Co.)

Corsicana, light (Powell)	1.25	1.00
Mexia	1.25	1.00
Currie	1.25	1.00
Thrall	1.00	...

RANGER

(Humble Oil & Ref. Co.)

30 and below	.90
30 to 32.9	1.10
33 to 35.9	1.25
36 and above	1.35

WICHITA AND ARCHER COUNTIES

(Texas)

(Humble Oil & Ref. Co.)

30 and below	.75
30 to 32.9	.90
33 to 35.9	1.10
36 and above	1.25

Moran Crude

30 and below	.75
30 to 32.9	.90
33 to 35.9	1.10
36 and above	1.25

SOUTH TEXAS

Mirando (Texpata)	.80	.75
Mirando (Magnolia)	.75	...

SOMERSET

(Grayburg Pipe Line Company)

25 gravity and above	.95	...
Below 25	.85	...

GULF COAST

Grade "A"	1.50	...
Grade "B" at Blue Ridge, Hull and Pierce Junction	1.25	...

LULING

All gravities	.90	...

LOUISIANA-ARKANSAS

Caddo

	Nov. 14 1924	Nov. 14 1923
38 gravity and above	1.35	...
38 to 37.9 gravity	1.25	...
32 to 34.9 gravity	1.15	...
Below 32 gravity	1.00	...

Homer

35 gravity and above	1.10	...
33 to 34.9 gravity	1.00	...
31 to 32.9 gravity	.90	...
Below 31 gravity	.75	...

COTTON VALLEY

All grades	.95	...

Haynesville

33 gravity and above	1.00	...
Below 33 gravity	.90	...

Bull Bayou

38 gravity and above	1.15	1.15
35 gravity and 37.9	1.00	1.05
32 to 34.9 gravity	.85	1.00
De Soto crude	1.20	1.25
Crichton	1.00	.90
Bellevue	1.10	.75
Jennings	1.25	1.00
Vinton	1.50	1.00
Edgerly crude	1.25	1.00

Smackover

Posted by Standard of La.

25 gravity and above	.95	...
Below 25 gravity	.85	...

Posted by The Texas Co.

Below 26 gravity	.85	...
26 and above	.95	...

Louisiana Oil & Refining Corporation

26 gravity and above	.95	...
25 to 25.9 gravity	.80	...
24 to 24.9 gravity	.70	...
Below 25 gravity	.85	...

El Dorado

33 gravity and above	1.00	...
Below 33 gravity	.90	...
East Field (Calion)	.85	...

Stephens District

26 gravity and above	.90	...
Below 26 gravity	.70	...

WYOMING-MONTANA

Wyoming

Elk Basin	1.20	.95
Grass Creek	1.20	.95
Rock Creek	.95	.60
Lance Creek	1.15	.80
Mule Creek	.60	.45
Big Muddy	.75	.45
Salt Creek	.85	.60
Osage	1.15	1.20
Hamilton Dome	.80	1.35
Pilot Butte	.75	1.10
Lander	.20	1.10
Torchlight-Greybull	1.15	1.35

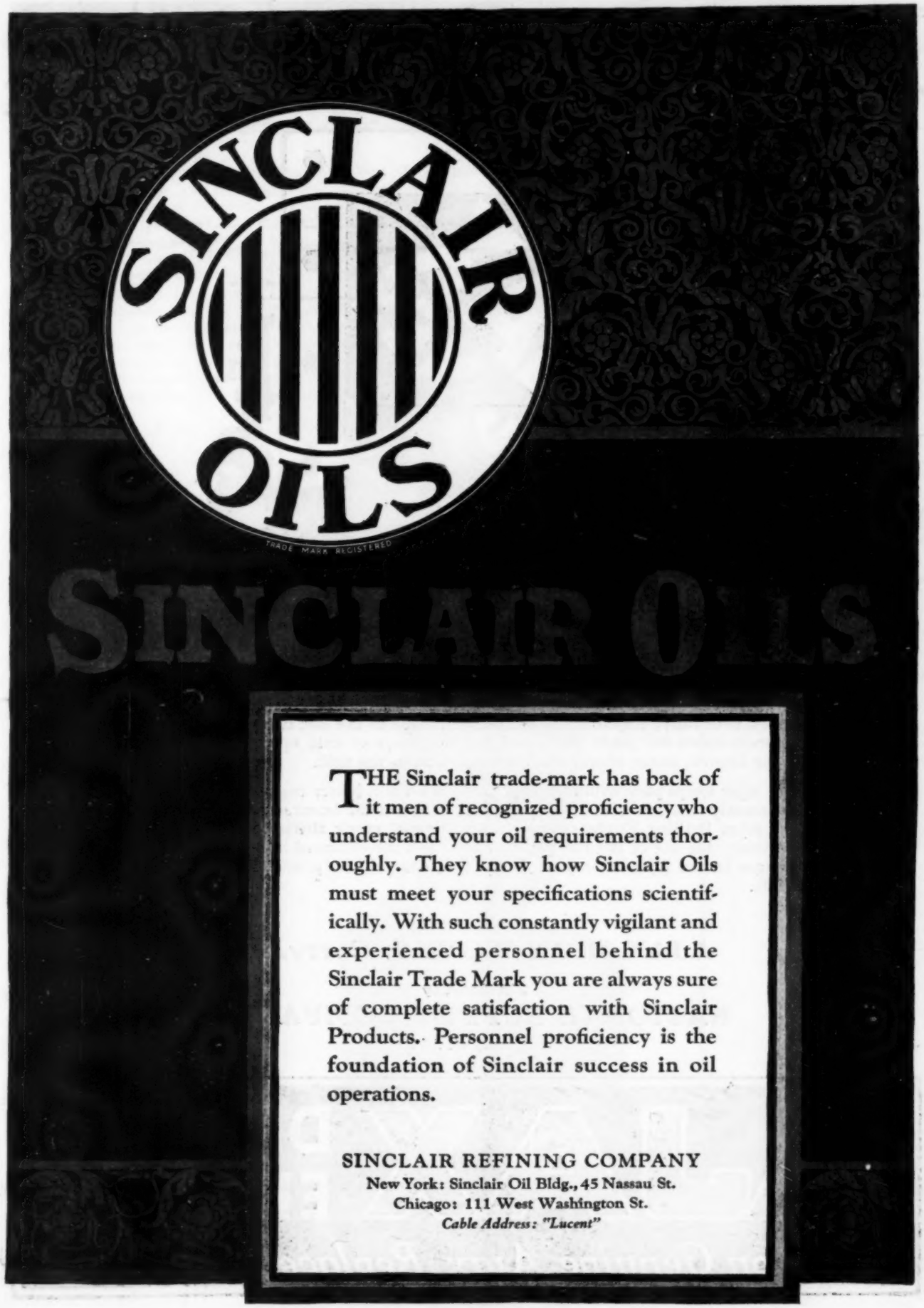
Montana

Sunburst	.90	.70
Cat Creek	1.20	1.35

CANADIAN CRUDE

Oil Springs	2.30	2.15
Petrolia	2.23	2.08

*Plus 2½ cents bounty.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THE Sinclair trade-mark has back of it men of recognized proficiency who understand your oil requirements thoroughly. They know how Sinclair Oils must meet your specifications scientifically. With such constantly vigilant and experienced personnel behind the Sinclair Trade Mark you are always sure of complete satisfaction with Sinclair Products. Personnel proficiency is the foundation of Sinclair success in oil operations.
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Say you saw it in The Oil Weekly

AJAX *Never Rests on Its Laurels*

Trade-Mark Reg. U. S. Pat. Off.

In spite of evident satisfaction with Ajax Drilling Engines for many years, over thirty improvements have been made in the last two years. These improvements are made after studying the needs of field operators and the Ajax Engine, under actual drilling conditions in the field.

Ajax keeps pace with the rapid demand for still better engines by keeping constantly in touch with field operators. A few of the latest improvements to the Ajax Drilling Engines are—the grinding of crank shafts to micrometer accuracy, the use of 16 to 20 per cent steel and the outboard bearing. Master gauges in the Ajax factory at Corry, Pa., control this precision on moving parts.

Manufactured by

AJAX IRON WORKS. Corry. Pa.

Distributed by

NATIONAL SUPPLY COMPANIES

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34116

AJAX DRILLING ENGINES

Insist on Genuine Ajax Replacement Parts

Operators Fraternity Fully Organized

Knights of the Derrick make application for Oklahoma charter—Markham chosen as president

Tulsa, Okla., Nov. 3.—John H. Markham, Jr., who has just returned from Europe, has accepted the presidency of the Knights of the Derrick, a position to which he was elected during his absence. A. V. Bourque is secretary and D. E. Buchanan is treasurer.

Application has been made for an Oklahoma charter for the Knights of the Derrick as an international association of oil men. It is said that an active campaign for membership will be launched immediately after the charter is granted. The membership already is 254.

The purpose of the Knights of the Derrick is to foster, encourage and promote the oil and gas industry, in all of its branches, and to form an association for educational, scientific, benevolent and charitable purposes, including the building of quarters suitable for meeting places and for the lodging and accomodation of members of this association, and the building, operating and maintenance of a home for the care of the sick and the support of the aged and indigent members of this association and provide means for the mutual association, so says the by-laws of the organization.

Any person actively engaged in the oil industry in any way is entitled to membership in the Knights of the Derrick, whether he be a resident of the United States or of a foreign country.

The site for the proposed home has not been selected and it will possibly be some time before a decision will be made. Climate, soil, nearness to oil fields and cost of maintenance will be the most important factors in determining the location for the home.

The control of the association is to be vested in the board of trustees, to be elected at the annual conventions of the association. The time of service for each trustee will be one year. From this list of trustees will be elected a vice president to represent each of the 17 producing states. As seven states are already represented in the order, the following men have already been elected: Oklahoma, Frank Phillips; Texas, J. Edgar Pew; Kansas, A. L. Derby; California, S. A. Guiberson; New York, Frank Haskell; Illinois, George Moore; Pennsylvania, M. L. Moore.

The 41 trustees will have general control of the property and business of the association, and after the first year they will have the power to elect the officers. Besides the 17 vice presidents, a president, a secretary and a treasurer will be elected by this board.

Each chapter of the Knights of the Derrick will be called a "location" and application for the installation of a "location" will be granted upon the request of 25 persons who are qualified to become members. The sum of $50.00 will be charged each new "location," this amount being required for a charter.

The fee for initiation will be $10.00 for charter members. Subsequent initiation fees will be the same. The annual dues in each "location" will be not more than $2.00, half of which will go to the parent "location" and the remainder be retained by the chapter where the initiation occurs. The headquarters of the association will be Tulsa.

JOHN H. MARKHAM, JR.
Independent operator of Tulsa, Oklahoma, who has been elected first president of the Knights of the Derrick.

Each "location" shall be entitled to two representatives, and one additional for each 25 members above 25 or major part thereof, to the annual meeting of the international association, the representatives to be elected by the "location" at its annual meeting prior to the international meeting.

The emblem of the association is a gold derrick with the letters "K. of D." embossed upon the base. It is made in suitable form to be worn by the members and is copyrighted.

The annual meeting place of the association will be in Tulsa, the second Saturday in the month of October. This date was selected for the reason that it will be during the time of the International Petroleum Exposition and Congress. The decision for the location and time of meeting was reached after taking into consideration railroad rates and the central location.

Plans for a large drive for memberships will start immediately. Memberships in the parent "location" are now coming in. Application for other "locations" will be received at office of the association at 505 Cosden Building, Tulsa.

The Board of Trustees of the Knights of the Derrick is composed of some of the most prominent men in the industry. This board was selected by a vote of the members of the organization and are as follows: J. Edpar Pew, The Sun Company, Dallas; T. J. Donoghue, The Texas Company, Houston; W. S. Farish, Humble Oil & Refining Company, Houston; A. L. Derby, Derby Oil and Refining Company, Wichita, Kansas; W. N. Davis, oil producer, Bartlesville; Frank Phillips, Phillips, Petroleum Company, Bartlesville; W. H. Huffman, Syracuse, New York; George N. Moore, Moore Refining Company, Chicago; Frank Haskell, Tide Water Oil Company, New York; Walter Teagle, Standard Oil Company (New Jersey), New York; S. A. Guiberson, Guiberson Corporation, Los Angeles; F. L. Moore, Frick-Reid Supply Company, Pittsburgh; T. B. Slick, independent producer, Clairion, Pa.; John H. Markham, Jr., independent producer, Tulsa; L. B. Jackson, President First National Bank, Tulsa; W. G. Skelly, Skelly Oil Company, Tulsa; Waite Phillips, Waite Phillips Company, Tulsa; Charles Page, Sand Springs Home Company, Sand Springs, Okla.; James A. Veasey, Carter Oil Company, Tulsa; P. J. Hurley, Gilliland Oil Company, Tulsa; James K. Crawford, Brothers Oil Company,

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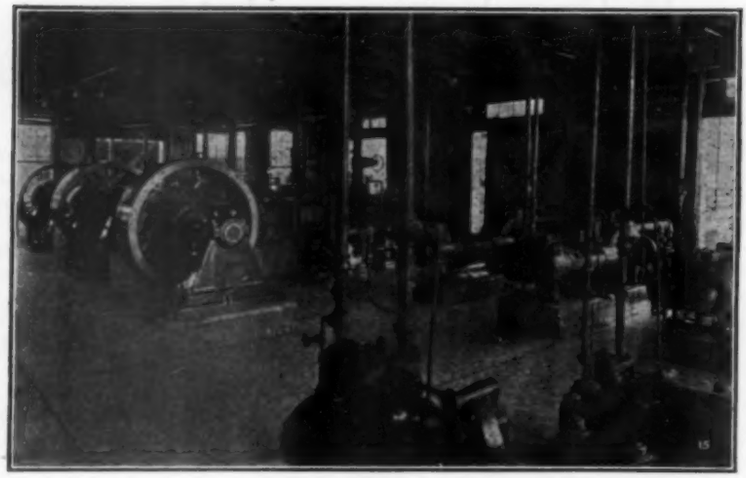

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Reservations Made Early For Institute Meeting

Fort Worth, Texas, Nov. 10.—A record attendance of oil men is forecasted for the annual meeting of the American Petroleum Institute to be held in Fort Worth on December 9, 10 and 11, and reservations for hotel accomodations are coming in daily. Requests for rooms at the leading hotels were received within 24 hours after Fort Worth was awarded the meeting, and many oil companies, supply dealers and equipment manufacturers representing all sections of the country are reserving hotel rooms for groups of their officials.

A general arrangement committee composed of officials of Fort Worth oil and supply companies has been appointed, and are now at work on an elaborate entertainment program for the visitors.

Heine Boiler Company Puts Representative in Georgia

Atlanta, Georgia, November 13.—R. C. Broach has been appointed southeastern district manager for the Heine Boiler Company, with offices at 709 Glenn Building. His territory includes eastern Tennessee, North and South Carolina, Alabama, Georgia and Florida.

Mr. Broach, a native of Atlanta, has previously been employed in the general sales department of the Heine Boiler Company, at St. Louis.

No one has yet invented a cheap article at a low price that could keep the purchaser convinced of its economy after it has gone through the test of actual service.

Placing of Mud Pumps On Rig Important

(Continued from page 32)

manifold riser is a more positive indication of what is occurring at the bottom of the hole and by all means should be used on every rotary rig, and continuously. The pressure gauge should be set and fastened securely to a support that does not vibrate and shake; the pressure gauge springs are delicate and shaking continually will destroy its accuracy.

When operating power driven pumps, driven by electric or gasoline motor, a pressure gauge is very necessary; in fact, the indications of the hole conditions around the bit cannot be as accurately had unless there is a pressure gauge facing the driller and registering the pressures.

Power Driven Pumps

Unlike the steam driven pump, the power driven drilling pump does not slow down as the pressure rises, when the hole balls up at the bottom. In operating this class of pump, the writer has found that the working pressure will climb as high as four hundred pounds, and unless there is some relieving valve, the hose will burst under this pressure; that is, the average wire wound fabric hose and, unless the hose clamps are carefully designed and thoroughly fixed in place, high pressures will blow it off of the nozzle. Many accidents have been due to hose blowing off.

While high pressure assists in making hole, high pressure should not be obtained by circulating a greater quantity of fluid than is safe for the wall of the well; but when the pressure rises due to balling up, a pop valve, especially made to handle drilling mud, is a safety measure worth its cost. The pop valve discharge can be led back to the pit.

Valve Gear

The slide valves of the steam end have no inside or outside lap; the ends of the valves exactly coincide with the outside edges of the steam ports, as shown in Figure No.2. If the valves lapped the ports on either side, the pump would stop, but, by making the length of the valve the exact distance from the outside edge to outside edge of steam ports; and the exhaust cavity the exact distance from inside edge to inside edge of valve, there is only one point in the valve travel where ports are completely closed. Since both valves are never in this position when operating, the pump starts. If the valves should occupy the position exactly over the center of the ports, as in Figure No. 2, there is always some leakage of steam and because this leakage is not the same in both ends, one end will receive more steam than the other and the pump starts.

When the valves are set as shown in Figure No. 2 the valves are in central position. With both rocker arms set exactly vertical, the lost motion "F" and "F" must be the same, to place the valve motion in the center for setting the valves. The lost motion "F", or free valve stem travel without moving the valves is adjustable in most drilling pumps. With the valve in the center, the lost motion must be exactly the same at both ends of the valve. This lost motion is the essential feature of this valve gear and permits the valve to remain at rest for a short period at the end of the stroke, though the valve stem may have reversed its motion and begun another stroke. Then, when the valve stem with the nuts have travelled back to strike the valve, taking up the lost motion, the motion of valve is positively controlled to the end of the stroke. The time of rest of the valve at the end of each stroke is approximately one-third of the stroke. This means that the piston travels one third of the stroke before it moves the valve on the opposite side. During the second third of the stroke, it is bringing the opposite valve to the point of opening and during the last third, it opens the steam port wider and wider, admitting steam to the opposite cylinder, so that the opposite piston starts when this piston has covered two thirds of its stroke and there is one third of the stroke only that both pistons are moving at the same time.

These divisions into thirds are approximate only; and depend upon the length of valve, width of port, and the arrangement of the valve gear.

Period of Rest

The periods of rest at the ends of the strokes allow the mud fluid to come to rest quietly and adjust itself quietly to the reversal of motion which takes place at the end of the stroke. When the piston stops, the water end valves must have time to seat and the flow of fluid to check against the valve. While the suction pipe of the drilling pump is not long, the fluid is heavy viscous and unwieldly compared to clear water, and it is easier to start the motion of drilling mud in the opposite direction when the reversal is not instantaneous. The duplex pump is therefore well suited to handling mud fluid by this delayed action. However, the discharge pulsations in duplex pumps are more than in pumps with more cylinders than two, where the pressure strokes overlap more, although the resiliency of the drilling hose and the air cushion of the pump discharge air chamber relieve the discharge of much pulsation.

When priming the pump, the pump

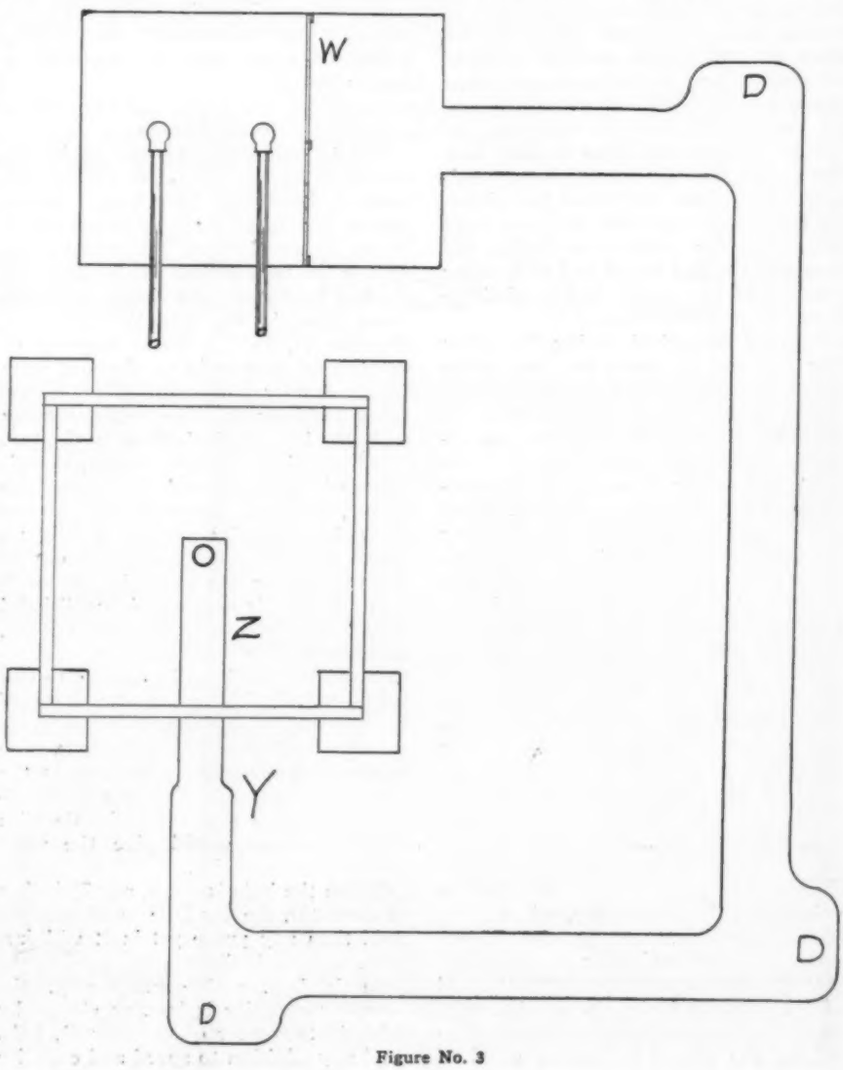

Figure No. 3

should run fast and smoothly without knocking the heads, even though no mud fluid is being pumped.

When the lost motion is large, the reversal of valve is delayed more, consequently the piston makes a longer stroke. This adjustment can be made so that both ends of the cylinder are struck by the piston, due to long stroking, caused by too much clearance.

Conversely, when this clearance or lost motion is reduced too much, the pump stroke will be shortened and the capacity reduced.

This lost motion cannot be calculated in this short paper, but is usually about 25 per cent. of the valve stem or rod travel.

Then, when the pump long strokes so much as to strike both heads, the lost motion should be reduced until the pump will run without striking the heads. When the pump short strokes this lost motion should be increased, and when only one end short strokes, the lost motion for that end will be found to be less than the other end.

Setting Valves

In setting the valves as shown, it is well to check the center of the piston rod travel. First push the piston to one end until it strikes the head and make a pencil mark on the rod at the stuffing box; then push piston to the other end, and make another mark at the stuffing box on the same rod; then measure half of the distance between the two marks, and set the point so found even with the same stuffing box. The rocker arm then should hang vertically. If it does not, then the piston rod may be screwed into the cross head fully, and, for perfect operation, the center of the rod travel and the rocker arm should be exactly in the middle—in the same vertical line.

Another method of setting the valves may be used to check the one given above, as follows: with the steam chest covers removed, find the center of rod travel as described in the next preceding paragraph and make sure that the rod travel center is exactly in the center with the rocker arm vertical. Then place the steam slide valve exactly over the ports, "line on line" and adjust the valve stem nuts so that the clearance on each side of the slide valve is exactly the same, with the clearance about 25 per cent of the length of the valve stem travel; then set the other side the same, and with the steam chest cover in place, the pump should operate smoothly, unless there are other pump troubles.

When the valve gear is securely fixed, with the valve stem nuts tight, very little trouble will occur to the valve motion, though, and it is well to check other parts of the pump before going into the valve gear, when there is pump trouble.

Cushioning

When the piston approaches the end of its stroke, the ports at that end, both inlet and exhaust, are over-travelled by the piston as shown at C of Figure No. 2. This over-travel closes the ports and traps the remaining steam in the cylinder between the steam piston and the end of the cylinder, forming a steam cushion to stop the pitson smoothly. When the piston speed is high, the momentum of the rods and pistons may compress the clearance steam to such point as will allow the piston to strike the head. To allow the pump to operate at higher speed, a pump of the dimensions of drilling pumps could be properly fitted with cushion valves, which are so arranged to admit a small quantity of steam to the clearance space for cushioning positively at each end of the stroke. The highest grade of duplex pumps of equivalent size, used for other work, are fitted with cushion valves for smooth, fast operation. The cushion valve may be regulated by hand and when used, the pump may be speeded up and more cushion steam admitted, to take out the knock.

Some years ago, several models of drilling pumps were regularly fitted with cushion valves, but the practice has been practically abandoned because the cushion valve stems were soon broken off by field handling of the pumps.

The effect of cushion valves may be obtained by shortening the stroke, when the pump may be operated at higher speed.

Pump Speeds

The 12-inch stroke pump may be operated at speeds up to 40 revolutions without knocking; but, with cushion valves, the speed may be increased to 50 to 55 revolutions per minute, resulting in an increase of capacity of about 25 per cent. As shown in a previous paper, in The OIL WEEKLY of October 11, 1923, a slight increase of velocity of mud flluid up the well bore adds a greater percentage of solids carrying capacity to take cuttings away from the bit and flush them to the top.

When a hole is first started, the diameter is greatest, and the formations usually softest. In such soft formations, it is usually possible to dig up more than the pump can flush out to the top, unless the pump is extraordinarily large. To secure the additional mud flluid for maximum drilling speed, the writer has coupled both pumps through the manifold in parallel to add more flluid with expected results of more hole. As the hole becomes deeper, and it is necessary to have one pump held in reserve for safety to the hole, this cannot be done and therefore the added speeds obtainable with cushion valves would give the same pump more capacity.

When the hole is large, say 26 inches in diameter, the big hole requires more fluid than any pump yet built will furnish, operated singly; the velocity of mud is low, and consequently, the carrying capacity is low, as shown by table in the paper of October 11, 1923. And any addition to speed and capacity makes the difference between the best drilling pump and a mediocre pump.

Therefore, cushion valves, which do add capacity to a pump, may result in the same pump being adapted to a greater range of hole size. Of course, when the hole is reduced in diameter, this is not materially a factor, but, since the larger hole is more difficult to maintain safe against caving, if this portion of the hole is made quickly and the water string set, caving troubles may be avoided.

Keeping Sand Out

When formations carry sand and such sand is allowed to travel around through the ditches back to the pit and into the pump suction, the liners of the pump will be cut rapidly. When the sand sinks to the bottom of the liner, the piston will rub back and forth and wear the bottom of the liner. Opening the water end cylinder cocks will remove some of the sand from the liner, but sand in the pumps can be entirely avoided.

Slush, running around the ditches, carries sand in proportion to the speed of travel; if the ditch is narrow, or is not kept clean and fills up with cuttings, the finer cuttings and sand will be carried around to the pit. But, the carriage of cuttings can be controlled and a method is shown in Figure No. 3, which is a ground plan showing the derrick foundation, ditches and pit. To run the cuttings out from under the derrick floor, the ditch is made narrow from the hole to a point outside of the derrick, and it is then enlarged. When enlarged, the mud flows more slowly, allowing the heavier cuttings to settle out, and to get sand out, the ditch is enlarged at the corners, as shown at D. When the slush travels through the enlarged and deepened corners, the velocity is reduced to a low point, allowing the sand to settle out also, and the outflow is free of sand. Of course, if the ditches are not kept clean, they will fill up with cuttings and cause the slush to run so fast that all cuttings will be carried around to the ditch.

Cuttings can be settled out at any point along the ditch, where best disposed of. If the ditch is four feet wide and kept four feet wide, using a 10x6x 12-inch pump, and the corners are enlarged as shown, the liners will not be cut out with grit. The 10x7x14-inch pump can have a ditch five feet wide.

A further precaution may be followed also, consisting of placing a division wall across the slush pit, as shown at W of the figure, so as to cause the slush to run over the top of the division wall into the opposite side to be picked up there by the pumps. This arrangement, though, makes the outgoing slush lighter than the mud in the other half of the pit, because the top portion flows over the wall and is therefore a means of retaining the heavy mud in the first side. A further refinement consists in arranging the wall so that either light or heavy mud

(Continued on page 50)

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Oil and Gas Prospects in Northeastern Colorado

Department of the Interior investigation promises possible production east of present fields

The Department of the Interior announces that new oil and gas fields may be discovered in northeastern Colorado far east of the proved fields of the Fort Collins-Wellington district, according to geologists of the Geological Survey, who have been examining that part of the state during the last few months. No anticlines comparable in steepness of flanks to those that contain oil and gas in the eastern part of Larimer County were found east of Larimer and Boulder Counties, but the exploration disclosed a broad, low anticlinal fold that extends southward from the eastern part of Weld County across Morgan County into the southwestern part of Washington County. The beds along this line are very gently flexed, the dip being much less than in most of the producing fields of the Rocky Mountain region, though similar to that in the Mid-Continent oil fields of Oklahoma and Kansas. Whether or not folds so gentle favor the accumulation of oil in Colorado can be determined only by drilling several properly located test wells. The exact depth to the reservoir beds that are believed to lie beneath the surface in Morgan and adjacent counties can not be foretold, but the federal geologists have concluded that at favorable localities the depths are not so great as to discourage drilling.

Geologic Work Done in 1924

The rocks underlying that part of Colorado east of the Rocky Mountains and north of the latitude of Denver are not unfavorable to the occurrence of petroleum, and sporadic attempts to find it have been made during a period covering many years. Interest in this region was neither general nor intense however, until after November, 1923, when a well that produced daily 80,000,000 feet of wet gas was completed near Wellington. Since then drilling activity has steadily increased, and interest has expanded from the region near the mountains, where the geology is well known, to the larger region on the east, where the geology is little known because the rocks are very poorly exposed. To meet the demand for information concerning that region, field studies were made by the United States Geological Survey from May to September, 1924. The work was begun by Julian D. Sears, who was assisted by James Gilluly and later by Ralph G. Lusk. Mr. Sears returned to Washington in June and thereafter the work was directed by Kirtley F. Mather. A detailed report is now being prepared by Messrs. Mather, Gilluly and Lusk and will be published as soon as possible.

Rocks Exposed in the Region

Northeastern Colorado is underlain by sedimentary rocks of Cretaceous and Tertiary age. The Cretaceous beds, which consist largely of shale and sandstone but include some limy beds and coal, were deposited before the upheaval of the Rocky Mountains. Most of the lower beds of the Cretaceous were laid down on the floor of a vast shallow sea, which covered all this part of North America. Near the end of the Cretaceous period the sea dwindled in size and became shallow until it finally disappeared from Colorado, leaving only fresh or brackish water lagoons, lakes and marshes. In these bodies of water, and on the flood plains of rivers, where part of the vegetation was buried and changed to coal, the uppermost Cretaceous beds were formed. The lower beds of the Cretaceous are the sources and the reservoirs of the oil and gas. The Tertiary beds were deposited after the Rocky Mountains had been upheaved and consist chiefly of debris washed out by streams from the mountains and spread far over the lowlands. Today they cover the Cretaceous rocks over large areas in Colorado and prevent the surface determination of the structure of the possible oil-bearing beds. Considerable areas, especially along South Platte River, are covered with sand dunes, river alluvium, and stream gravel, which were laid down still later, in Quaternary time, and these also obscure the geology of the underlying strata. The succession of rocks in the region is shown in the following table:

Structure Near the Mountains

Where exposed in the hogbacks near LaPorte and elsewhere along the front of the Colorado Rockies, the Dakota, Benton and Niobrara formations dip eastward at angles of 20° to 40°. If this steep inclination continued it would carry these beds far below sea level a few miles east of their outcrops. Toward the east, however, the inclination gradually becomes less. The Hygiene sandstone member in general dips eastward at an angle between 15° and 25°, and the higher sandstone beds, such as the Rocky Ridge and the Richard, show dips of 8° to 14°. Still farther east, near the boundary line between Larimer and Weld Counties, the Fix Hills beds dip at angles of 4° to 8°, and a few miles farther east the Laramie lies nearly horizontal. This prevailing eastward dip, which decreases with increase of distance from the mountains, is the characteristic structural feature of the country within 30 miles of the mountain front.

There are, however, several very significant local reversals of the regional dip, which have determined the location of the known oil and gas fields in this part of Colorado. A well-defined, slightly sinuous anticlinal fold extends from a point about 2 miles northeast of Fort Collins in a general northerly direction for about 14 miles. The beds on the west side of this fold dip westward at angles of 10° to 15°; those on the east side dip eastward at angles of 5° to 10°. A little south of west from Wellington a saddle on the anticlinal crest divides it into two parts, known as the Wellington and Fort Collins anticlines. The "closed" portion of each is between 4½ and 5 miles long and is nearly 1½ miles wide. The Discovery, Mitchell and Scott wells of the Union Oil Company of California are drilled

Geologic Formations in Northwestern Colorado

Quarternary—Gravel, sand, and alluvium	0-100	
Unconformity.		
Tertiary—Gravel, sand, and clay	10-300	
Unconformity.		
Cretaceous:		
Laramie formation—Sandstone, shale and coal	200-800	
Fox Hills formation—Sandstone, and shale	400-1,800	
Pierre Shale:		
Dark shale with some beds of sandstone	1,500-6,000	
Shale with many sandstone lenses	1,275	4,500-10,000
Richard sandstone member	0-70	
Sandy shale	100-200	
Larimer sandstone member	0-150	
Sandy shale	0-170	
Rocky Ridge sandstone member	0-165	
Sandy shale	300-600	
Terry sandstone member	0-20	
Sandy shale	200-400	
Hygiene sandstone member	0-100	
Dark shale and sandy shale	2,400-3,100	
Niobrara formation:		
Limestone and limy shale	330-410	
Benton shale:		590-640
Upper sandstone member (the so-called "Nio-Benton" of some geologists)	10-20	
Dark shale, limestone, and bentonite	580-620	
Dakota formation:		
Upper sandstone member (Muddy sand of drillers)	30-80	
Dark shale	110-240	315-425
Middle sandstone member	10-15	
Sandy shale	25-65	
Lower sandstone member	35-75	

near the top of the Wellington anticline. The Whitaker well was drilled by the same company on the top of the Fort Collins anticline.

Two miles west of the saddle between the Wellington and Fort Collins anticlines there is a smaller fold, known as the Douglas Lake anticline, which has a similar trend. Its "closed" portion is about two miles long from north to south and half a mile wide from east to west. About 19 miles south of Fort Collins and two miles west of Berthoud is a fourth fold, somewhat similar, known as the Berthoud anticline. It is about three miles long from north to south and about one and one-half miles wide from east to west. The flanks of these two anticlines dip at angles ranging from 4° to 12°.

The rocks exposed at the surface on these four anticlines belong in the upper part of the middle third of the Pierre formation. The Rocky Ridge sandstone member and the shale just below it appear at the surface along the crests of the Wellington, Douglas Lake and Berthoud anticlines, and the shale beneath the Larimer sandstone member is exposed along the crest of the Fort Collins fold. Starting at these horizons the Discovery and Mitchell wells, drilled on the Wellington anticline, tapped the pay sand at depths of 4285 feet and 4216 feet, respectively, and the Whitaker well, on the Fort Collins anticline, came in at a depth of 4475 feet.

After the discovery well had struck gas, before the other two had been drilled, no one could tell which of two sandstones was yielding the gas—the so-called "Nio-Benton," a sandy member 18 to 20 feet thick, at the top of the Benton formation, or the upper sandstone (Muddy sand of the drillers), 30 to 40 feet thick, at the top of the Dakota formation about 600 feet below the "Nio-Benton." Several geologists working independently had calculated from the surface data that the "Nio-Benton" sand should lie at depths between 4100 and 4500 feet at the site of the discovery well. Measurements made by Messrs. Sears and Gilluly indicated a depth of 4470 feet for the "Nio-Benton" and consequently of more than 5000 feet for the upper sandstone of the Dakota formation, yet the character of the sand struck at 4285 feet led them to decide that this was the upper sand of the Dakota. This decision has now been amply verified by the records of the Mitchell and Whitaker wells which prove that the gas and oil struck in the Wellington and Fort Collins fields is obtained from the uppermost member of the Dakota formation and not from the top of the Benton shale. It may here be noted that the "Nio-Benton" sand is not the equivalent of the Wall Creek sand of Wyoming, as has been supposed. With the assistance of J. B. Reeside, Jr., the geologists were able to correlate this sand with the Carlile shale, which lies well above the Wall Creek sand in Wyoming, and to decide that the Wall Creek sand is not present in the foothill region of northern Colorado.

The fact that the upper sandstone of the Dakota has been reached in all three wells at depths 500 to 700 feet less than those indicated by the surface geology demands explanation. So many geologists working at different localities have reached the same conclusion that the discrepancy can hardly be due to an error in measurement. Nor is it likely that hidden faults have caused a duplication of outcrops so nicely balanced that sections measured at several different places between the wells and the mountains should give nearly identical thicknesses for the strata. The conclusion seems inevitable that the formations involved are thinner in the Fort Collins-Wellington field than at the places where they crop out, a few miles farther west. This thinning does not seem to be due to differences in the thickness of the beds as originally deposited, which would indicate an abrupt decrease in the thickness of the mid-Cretaceous strata eastward from the mountain front. On the contrary, according to Mr. Mather's interpretation, most if not all of the apparent thinning is due to the stretching of beds on the crest of the Fort

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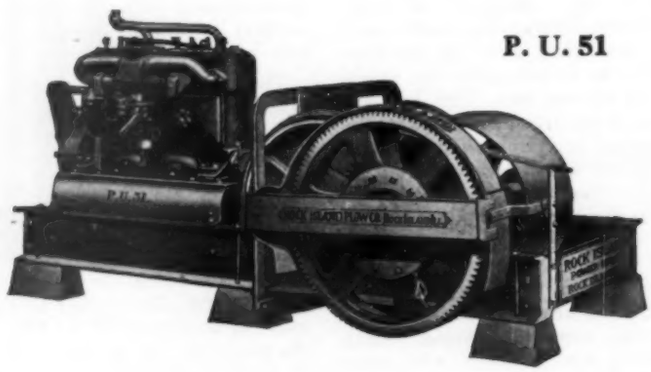

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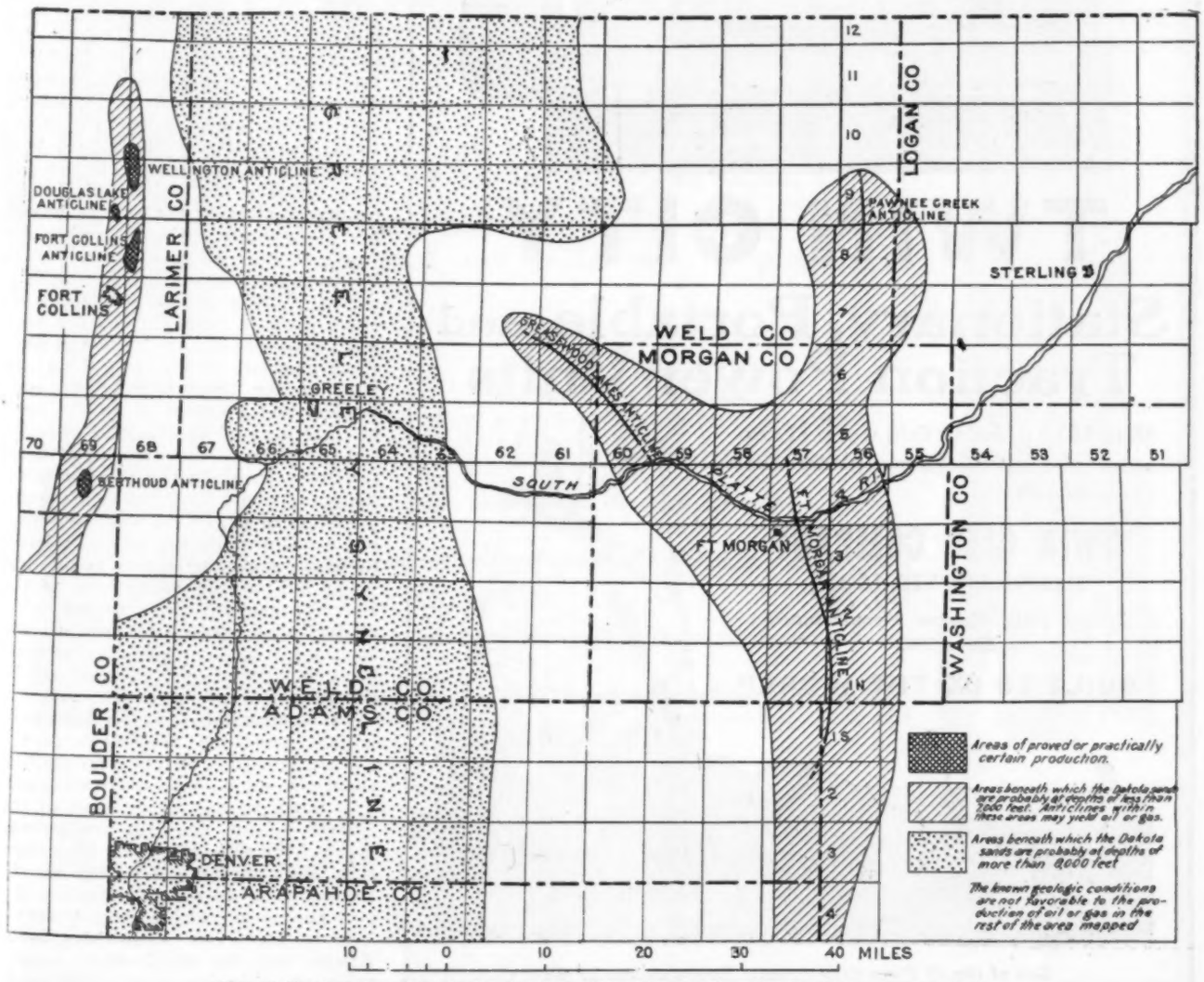
Collins-Wellington fold by the bending of the strata that form the fold.

Structure Away from the Mountains

East of the four anticlines named, wherever the conditions are known in Rs. 67, 66, and 65 E. north of the fortieth parallel, the Cretaceous beds dip toward the east without reversal. The inclination decreases more or less regularly until, in the eastern half of this strip, the beds are nearly horizontal. Nevertheless the dip is sufficient to carry the Dakota formation far below sea level unless there is much more abrupt thinning of the formations between the Dakota and the Fox Hills than the known facts would indicate. Because of this dip the beds that crop out near the producing wells north of Fort Collins lie 4000 to 6000 feet below the surface in the vicinity of Nunn, Eaton, Greeley and Hudson. The upper sand of the Dakota in the Fort Collins and Wellington fields can scarcely be less than 8000 feet below the surface in this part of Weld County.

After making all possible allowance for the convergence of the Dakota and Laramie strata because of the eastward thinning of the intervening Pierre and Fox Hills formations, a geologist would not hold out much hope that the upper sand of the Dakota could be reached at any practicable drilling depth in northeastern Colorado unless the regional eastward inclination of the beds were reversed so that strata far below the Laramie again came to the surface. Fortunately, abundant evidence of such reversal has been found in the study of the areal distribution of the Cretaceous formations. Between Hardin and Masters Fox Hills beds appear at several places on the south side of South Platte river. About three miles east and southeast of Osgood the Fox Hills formation is exposed in a region that is nearly or quite surrounded by Laramie beds. All of Morgan county except the extreme northwest and southwest corners is occupied by Fox Hills and Pierre beds, which are covered at several places by Tertiary gravels, sand, and clay. Extending southward from Fort Morgan at least as far as the southwest corner of Washington county there is a belt of Pierre shale, five to fifteen miles wide, bordered on both sides by Fox Hills sandstone and shale; and north of Stoneham, in easternmost Weld county, and in adjacent parts of Logan County the two main heads of Pawnee creek have cut their valleys through the cover of Tertiary sediments and have exposed Pierre shale, again nearly or quite surrounded by Fox Hills beds. East of Sterling the eastward-dipping Fox Hills beds disappear beneath Laramie strata that underlie the Platte River bottom in the east half of Logan county, but south of T. 4 N., Rs. 52, 53, and 54 W., the edge of the Tertiary cover extends over the Fox Hills formation, so that the presence or absence of Laramie beds under the Tertiary beds in this vicinity can not be determined.

In all this region in Morgan and adjacent counties the beds lie very nearly flat. Dips of one-half to three-fourths of a degree are the rule; a dip of 1½° or 2° is exceptional; at no place is the dip so much as 3°. The exposures are in general far apart, and the individual outcrops are small. Under such conditions the true bedding and dip of the strata are difficult to determine with certainty; the slight dips observed at the surface may not represent truly the dip a few thousand feet down. Such a formation as the Pierre shale must have been compacted differently in different areas under its varying overburden of sediments, and the structure of its uppermost beds or of the over-


WELLINGTON ANTICLINE
DOUGLAS LAKE ANTICLINE
FORT COLLINS ANTICLINE
FORT COLLINS
LARIMER CO
LOGAN CO
PAWNEE CREEK ANTICLINE
STERLING
WELD CO
MORGAN CO
GREELEY
BESTHOUD ANTICLINE
SOUTH PLATTE R.
FT MORGAN
WASHINGTON CO
BOULDER CO
WELD CO
ADAMS CO
DENVER
ARAPAHOE CO
Areas of proved or practically certain production.
Areas beneath which the Dakota sands are probably at depths of less than 7,000 feet. Anticlines within these areas may yield oil or gas.
Areas beneath which the Dakota sands are probably at depths of more than 9,000 feet
The known geologic conditions are not favorable to the production of oil or gas in the rest of the area mapped
10 0 10 20 30 40 MILES

Map of Northeastern Colorado showing areas favorable or unfavorable for the occurrence of oil.

lying Fox Hill beds, in which the dips are so gentle, is probably quite different in detail from that of the underlying Niobrara, Benton, and Dakota beds.

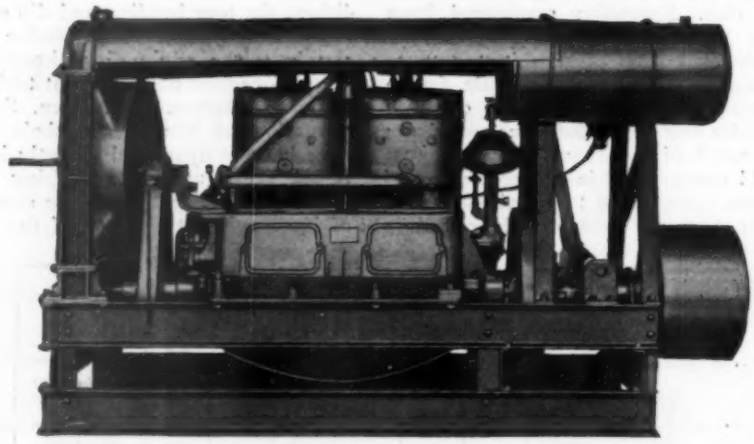
The best clue to the presence of anticlinal folds in the Dakota formation beneath northeastern Colorado is therefore the areal distribution of the overlying Pierre, Fox Hills, and Laramie beds. Outcrops of Pierre shale east of the Greeley syncline can occur only at places where upward flexures of the beds have lifted them a thousand feet or so above the altitudes beneath Greeley. The summits or higher flanks of such regional anticlines are the only places where prospecting for oil is justified by the known geology of this part of the state.

The localities where anticlinal folds may be inferred from the areal geology are indicated on the accompanying map. The most notable of these folds is the Fort Morgan anticline, which apparently extends in general southward from the southwest quarter of T. 5 N., R. 57 W., across T. 4 N., R. 57 W., and the east half of T. 3 N., R. 57 W., and continues southward close to the boundary between Rs. 56 and 57 W. at least as far as T. 2 S. and probably several miles farther. Next in importance is the Pawnee Creek anticline, which brings the Pierre to the surface in Tps. 8 and 9 N., R. 56 W., in the southwest quarter of T. 9 N., R. 57 W., and the northwest quarter of T. 8 N., R. 57 W. A third flexure, the Greasewood Lakes anticline, curves southeastward from the southwest corner of T. 7 N., R. 61 W., into the southwest quarter of T. 6 N., R. 60 W., and beyond that is lost among the sand hills north of Goodrich.

Apparently none of these three anticlines is comparable in sharpness of folding to those near the mountain front from which oil and gas are now being produced; they are very much broader folds with much lower dips. In fact, very few of the known oil-bearing anticlines in the Rocky Mountain field are as gently arched as these, the sides of which dip only a degree or two. It might be logical, therefore, to doubt whether these low anticlines could cause oil to accumulate in large pools along their crests. But it is in just such anticlines as these that the oil pools of the Mid-Continent field are found, and it is therefore believed that they should not be passed by without thorough tests.

The geologist may confidently predict that sandy beds well fitted to serve as reservoirs for oil and gas lie beneath the surface in northeastern Colorado, but, unfortunately, he can not yet state precisely the depth to such sands at any specified locality. As yet only one sand, the upper sand of the Dakota formation, is abundantly productive in the adjacent oil and gas fields near Fort Collins. Nevertheless the possibility of obtaining oil from other sandy beds should not be overlooked. Probably the Hygiene and other sandstone members of the Pierre formation become thinner and finally disappear at greater or less distances east of their outcrops near the mountains. None of these beds have been recognized in the areas of Pierre outcrop, either in the vicinity of Morgan county or close to the eastern boundary of Colorado. About 10 miles due south of Fort Morgan a sandy zone has been encountered in water wells at depths of 500 to 600 feet, but the sandstone there is probably not the eastward extension of any one of the sandstone members near Fort Collins. In view of the occurrence of oil near Boulder and Florence, it seems possible that oil may be found in commercial quantities in one or more of these sandstone lenses in the Pierre. If so, the pools would be found near the upper edges of the lenses, where the porous sandstone pinches out. Probably there are sandstone lenses which thus pinch out on the west flank of the Fort Morgan anticline and which lie at depths of 500 to 5,000 feet, but the surface geology gives no clue to their location. Drilling for them would be the wildest of wildcat ventures.

The upper sand or some other of the closely associated sandstones of the Dakota formation offers by far the best chance for oil in northeastern Colorado. The depth to this upper sand of the Dakota depends upon the amount and place of the thinning of the Pierre and Fox Hills formations. Only in the Denver basin do these formations display the great combined thickness of 7,000 to 10,000 feet. Elsewhere, as in Kansas and the Black Hills region, their total thickness is only 2,000 to 4,000 feet. In the northwest corner of



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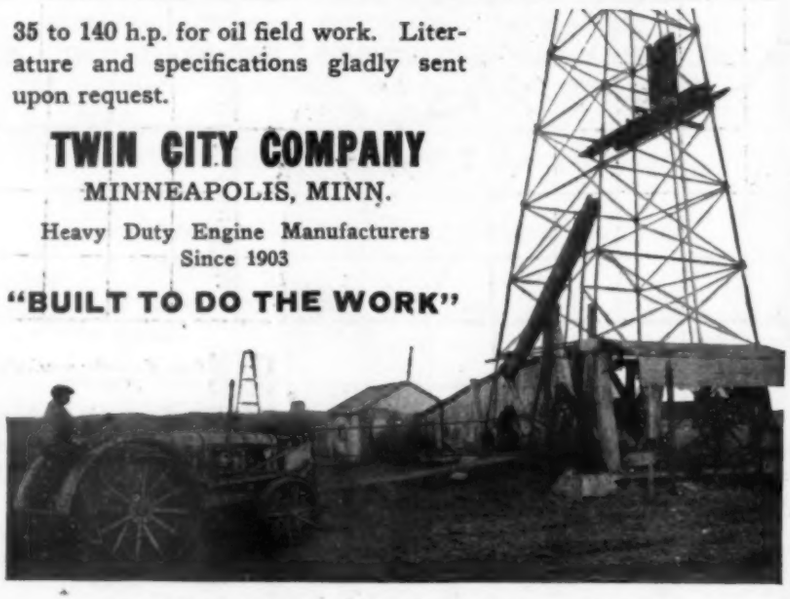
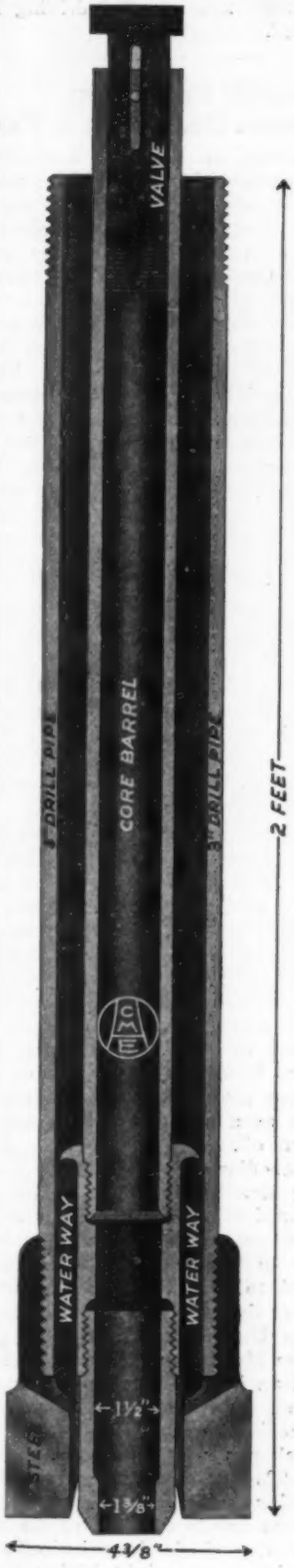


One of the 15 Twin City Tractor Hoists owned by the Comer Oil Company, Tulsa, Oklahoma



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Morgan county the Fox Hills formation is only about 400 feet thick, whereas 50 miles to the west, near the Larimer-Weld county line, its total thickness is 1,800 feet. Presumably the Pierre thins eastward somewhat less abruptly, but its thickness in northeastern Colorado can not be determined, because, unfortunately, those wells in this area that start in recognizable beds near the top of the Pierre have not penetrated the Dakota, and those near Wray that have reached the Dakota start at an unknown position in the Pierre. The Padroni well, north of Sterling, which starts approximately at the base of the Laramie, may have reached the Carlile or top member of the Benton at a depth of 4,484 feet, but the record of this well is indefinite and unreliable. The best that the geologist can do now is to state that the upper sand of the Dakota formation may be reached at depths between 4,000 and 6,000 feet below the surface along the crest of the Fort Morgan anticline near the southern boundary of Morgan county.

With this information at hand the value of the various parts of northeastern Colorado for prospecting have been indicated on the accompanying map. The most favorable areas are shown by crossed lines. Those areas in which the Dakota probably lies at depths of less than 7,000 feet beneath the surface are shown by a single line pattern; within these areas only the higher parts of the anticlines should be tested. In the unshaded areas and especially in the Greeley syncline the known geologic conditions are unfavorable for the production of oil and gas and drilling is not justified.

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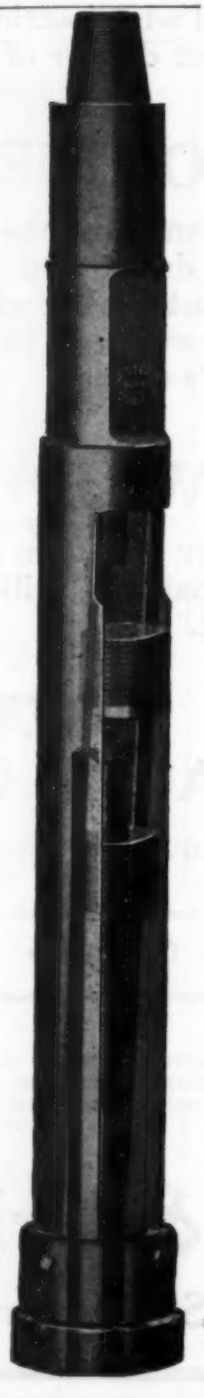

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Canadian Oil Production Shows Decline Each Year

Washington, D. C., Nov. 3.—Crude petroleum production in Canada is relatively small and for the past few years has been slowly but steadily declining, in spite of the bounty paid by the Canadian Government to encourage domestic output, it is declared in a report just issued by the petroleum section of the minerals division of the Department of Commerce. In 1923 Canada stood 19th in the list of petroleum-producing countries, with a total of 170,169 barrels, valued at $522,068, a decline of about 9000 barrels from the 1922 figures. In 1900, Canadian production was over 900,000 barrels. Last year's production represents less than one-fifth of one per cent of the total world output.

The bulk of the Canadian oil comes from the southwestern peninsula of Ontario, with a few thousand barrels being produced in New Brunswick and Alberta. Exploratory work has been conducted in British Columbia, the Prairie Provinces and in the Mackenzie River district, without any commercial production resulting so far.

In addition to petroleum, Canada has extensive deposits of oil shale, which attracted attention for some time and which are said to offer possibilities of further development, the report states. Shale deposits occur in Nova Scotia, New Brunswick, Quebec, souhwestern Ontario, British Columbia, Saskatchewan and Manitoba. The deposits of bituminous or "tar" sands along the Athabasca River in the province of Alberta have also received considerable attention as a probable future source of mineral oil.

The Canadian refining industry is developing steadily, in spite of the declining production of crude oil. During the fiscal year ended March 31, last, imports of crude oil for refining amounted to 11,965,468 barrels, something over three-fourths of which came from the United States, and the balance from Mexico and Peru. This represented an increase of about five per cent over corresponding imports for the preceding year.

Natural gas production in Canada during 1923 totaled a little more than 14½ billion cubic feet, almost all of which was produced in Ontario and Alberta. Ontario is the principal producer, with nearly eight billion cubic feet in 1923, although the output of the province is said to be declining, while the production in Alberta, amounting to a little over six billion cubic fee last year, is increasing. Some natural gasoline is being recovered from this gas, two absorption plants in Alberta last year recovering about 1,600,000 U. S. gallons.

Camp Beaty Cures That Tired Feeling

Texas Company employes have an ideal spot for sports and recreation

By W. V. Gross
Staff Representative

LONG feeling the need of a recreational center for its employes, The Texas Company has laid out and partially finished construction on one of the most complete recreation camps in the state. The place, called "Camp Beaty," is located on the Wallisville road, 10 miles southeast of Houston.

The Texas Company donated 112½ acres of land for the site and the initial expense of the erection of buildings and improvement of the grounds.

In addition to an elaborately furnished club house, equipped for dancing, games, radio, reading and dining, the company has provided golf links, which promise to be one of the sportiest courses in Harris County, owing to its natural rugged topography.

For week-end visitors or those who wish to spend their vacation at Camp Beaty, 10 bungalows have been built. Four of the bungalows are four room structures and six are two room structures. Each is equipped with cots, light furniture and a kerosene stove. Two more bungalows of the four room type are under construction. These cottages are furnished to employes at a nominal sum.

Besides having its own electric light system, two water wells have been drilled at the camp. One serves the domestic needs of the site and the other acts as a feeder to a natural reservoir, Lake Bob John, which is used for fishing and canoeing. Six row-boats have been launched in the lake for the convenience of the company's Isaac Waltons, and a bath house with showers erected near it to accommodate bathers.

The property of Camp Beaty faces Green's bayou for a distance of 1320 feet. The stream is 15 feet deep and affords a navigable course from Houston's municipal pier to the camp, by way of Buffalo river and Green's bayou. It is the intention of The Texas Company to place a fleet of small boats in the bayou for those wishing to take short trips and explore nearby inland streams.

With a view to taking care of the employe's family as well as the man himself, a children's playground, furnished with merry-go-rounds and all the facilities that go toward making children happy, has been provided. A great deal of time has been spent on the development of this unit of the recreational camp.

Other features of Camp Beaty under construction or to be constructed within the next few months are tennis courts, hand-ball courts and the "Barnyard Golf Links," places for pitching horseshoes.

The camp is run along club lines. After making practically all of the initial expenditure, the company relies on the employes to raise sufficient money to maintain the camp. Each man who joins the Camp Beaty club is required to pay an initiation fee of $50. To this is added dues of 75 cents per month, making the first year's total membership expense $59, which is far lower than equal privileges could be obtained in the ordinary country club. After the camp has been operated for a year,

Swimming at Camp Beaty

revenue for its maintenance is to be from monthly dues only.

One of the outstanding features of the camp will be to keep the monthly dues in line with the bare cost of maintenance, in order that no member shall be embarrassed by the cost of membership in the camp.

Believing that the membership in the club would grow to about 500 in the future, the camp was opened August 30 with hardly enough charter members to bear the maintenance cost. Since that time the club's roll has grown and it now has a membership of 560. Both resident and non-resident memberships are issued to The Texas Company employes.

The membership committee listed below is to function as a governing body of Camp Beaty until a permanent organization has been effected: Ernest Carroll, chairman; H. E. Bragg, A. M. Donoghue, F. C. Jones, Jack Herndon, A. R. Megarity, Otto Hartung, C. W. Daney, D. L. Lindsey, L. J. LaRue, R. G. Dawson, C. W. Redman, H. G. Symms, Fred Carroll, L. A. Millican, H. Tomfohrde, V. L. Porter, G. W. Foster, J. J. Shaw and W. R. Thomas.

Placing of Mud Pumps On Rig Important

(Continued from page 40)

may flow from the receiving side to the delivering side.

Insofar as settling out cuttings, the length of ditch is not material; a short ditch will settle out cuttings just as readily as a long ditch, provided the velocities are the same, but the long ditch provides more storage space for cuttings and a gerater area for disposal and do not have to be cleaned at such short intervals as the short ditch. A ditch with minimum length of 80 feet and a maximum of 130 serves the purpose when kept clean.

When a pump is shut down, the steam cylinder drain cocks should be immediately opened to prevent water collecting in the cylinders and interfering with starting and lubrication.

When the pump is started up after shut down for a time, as when coming out of the hole and going back, the steam line should be blown clear of water before opening the pump throttle valve, else the water contained in the steam line passes through the steam cylinder and causes the pump to run stiffly because the water washes the lubricant from the cylinder walls.

Wet steam also washes out the lubricating oil and where wet steam is not avoidable, a good grade of steam cylinder oil is necessary to provide lubrication. A straight mineral oil, such as a steam refined cylinder stock without compound, or crude oil, is not suitable for pump cylinders with wet steam. When steam cylinder oil, or as it is also called, valve oil, is compounded with from two per cent. to five per cent. of animal fat, the oil takes on the peculiar property of sticking to the hot cylinder wall and is difficult to wash off with hot water or wet steam, whereas, crude oil is readily washed off. A high compound is generally best for use in the field because the oil country boiler is not a dry steamer, and the percentage of animal fat being increased as the moisture in steam increases, for best lubrication, the high compound does best generally.

It will be found that when a good grade of cylinder oil is used, the pump will operate more easily, is less apt to stick and refuse to move, short strokes much less, delivers a greater percentage of capacity, and gives general all round better service.

The cost of steam cylinder oil for pumps is but a fraction of the cost of fuel consumed because of the additional steam required to operate the poorly lubricated pump.

Lubricators

The size of lubricator furnished with drilling pumps is entirely too small and is usually without any means of determining whether the pump is receiving oil or not. The 10x6x12-inch pump requires more oil than the engine because the two cylinders expose more surface; the 12x7x14-inch cylinder is larger than the steam engine cylinder, usually, and the two steam pump cylinders require considerably

The Golf Course is one of the interesting features of the Texas Company's camp.

FIELD NOTES AND PRODUCTION STATISTICS

Operators so Far Hit Hard at Rosecrans

New California pool has only produced about 275,000 barrels oil—More than $7,000,000 spent

By W. E. Green
Staff Representative

Los Angeles, Calif., Nov. 8.—The new Rosecrans field in Los Angeles county, according to an estimate made this week, has produced about 275,000 barrels of oil during its life, the oil having a value of close to $400,000, while since the beginning of drilling in the field, the operators have expended around $7,000,000. The worst part of the story is that indications now are that they will never get their money back.

The story so far of the Rosecrans field, the producer of the highest gravity oil in commercial quantities in California, is one that will make the oil companies and operators, big and little, stop and listen, and then go ahead carefully. The wells in the field are expensive to drill, bonuses when the excitement was on were high, and the results have been disappointing, to say the least.

First Well Started July, 1923

The Union Oil Company during July, 1923, spudded Rosecrans No. 1, and they have been working on this test ever since, with indications that it will never be completed. This is the well that first found the oil sand, but it has never been possible to cement off the water. And the test probably carries the distinction of being the scene of more cementing jobs than any well in California. The number of attempts to cement off the water has been lost sight of. An account was kept until some three months ago.

The first producer completed in the field was about one mile north of the Rosecrans well, which came in last May and has been producing ever since. This well is making 37 gravity oil. The big excitement was on when the Superior Oil Company completed its Maxwell a few hundred feet east of the Union's Rosecrans for a production exceeding 1000 barrels a day of 42 gravity oil. They went wild then. Derricks sprang up on every side, and in almost every direction.

Fifty-two Wells

At this time there are 52 wells either drilling or shut down uncompleted in the field with eight wells producing. The eight wells Friday produced around 4000 barrels, although the daily average over the week was but 3400 barrels, due to the newest well not being completed until Wednesday.

The latest well is Union Oil Company's Rosecrans 4, located on the tract where the first test of the field was drilled, which found oil, but has never been completed. Rosecrans 4 came in for about 2000 barrels of 42 gravity oil at 4226 feet, 13 feet in the sand. It is flowing through ¾-inch bean or choker, with heavy gas pressure. The flow increased to 2534 barrels November 5 and then fell off to 2300 barrels November 6. The gravity had increased to 42.4. The Superior's Maxwell, the first high gravity producer, has declined to less than 400 barrels a day, but the pressure holds. Other wells some distance away came in for around 1000 to 1200 barrels a day, but the gravity was around 37 to 38, and their production declined fast also.

Expensive Drilling

Sixty wells have been drilled in this field a depth ranging from 3000 to close to 6000 feet and it is estimated that the average cost of drilling these wells is around $100,000 each. Many have cost more while others have cost less. But the figure given is conservative for all wells in the field, as an average. This figures a total drilling cost of $6,000,000. Add to this total bonuses paid of about $1,150,000, or about 2300 acres, and you have a total expenditure of about $7,150,000 in the field with the recovery to date of about $400,000 worth of oil.

In the northwest part of the field, Dabney's test was drilled to 4781 feet and when a test was made, there was much water and a little oil. Bottom is being plugged for another test. Julian drilled two wells in this general vicinity and both are shut down below 4500 feet with no showing. The General Petroleum's Amstoy in the northeast section is down to 5800 feet with no showing. The Standard's test in the northwest has reached 5000 feet with-

(Continued on page 54.)

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more oil. But we find that the lubricator furnished with the pump is about one tenth the capacity of the lubricator furnished with the engine. One large engine lubricator, placed so as to deliver oil in the steam line before the line is divided to go to each pump, so that one lubricator only is required, affords a positive method of lubrication that is worthy, well worthy, of the cost. And this style of lubricator is better than the type furnished with the pump, to screw into the top of the steam chest cover.

When a pump will not start when steam is turned on, there are better and easier methods than starting with a crow bar or sledge hammer. It is far less work to know the pump inside and out, bottom and top, both ends and the middle, first, and to use some head work to make it run, rather than hand or foot or mouth work.

When the pump will not start, look at the water end first. It is seldom that the valve setting changes and the valve motion should come last when going through a pump to see why it will not start.

If the steam pump is properly lubricated in the steam cylinders and valve chest; if the packing in the water end is not too tight; if the liners are not worn so much as to bind the water end piston at the ends; if the rod packing of the steam and water end rods is not too tight; if the stuffing box bolts are drawn up evenly so as not to cock the stuffing box sidewise and bind the rod; if the steam cylinder is drained of water, then the pump should start. If it does not, then open the steam chest and check the valve setting and if this is found to be out of line, set them carefully and tightly and at the same time replace worn rocker arm shafts and stand links and pins to take out the lost motion of these, and the pump should run as good as the first day it had steam.

CALIFORNIA FIELD OPERATIONS

The following table from statistics compiled by State Oil and Gas Supervisor R. D. Bush for California for the past several weeks gives a true insight into field activities:

Month of—	New Wells started	Water Shut-off tests	Deepening jobs	No. Wells aband.
June, 1923	120	195	39	22
July	94	145	46	23
*August	96	141	41	26
September	122	194	39	36
October	114	131	38	25
November	100	151	48	23
*December	105	181	37	32
January, 1924	120	111	48	23
February	125	97	49	47
*March	142	183	81	99
April	130	154	76	34
*May	156	171	79	34
June	118	149	66	18
July	112	129	69	28
August	105	142	86	34
Week ending—				
September 6	29	31	11	3
September 13	18	41	27	9
September 20	19	23	19	11
September 27	21	23	22	12
October 4	18	30	21	2
October 11	22	27	15	6
October 18	18	27	21	4
October 25	20	17	15	3
November 1	23	29	17	5

*Denotes months with five weeks.

Average Daily Production for all U. S. Fields

Kansas

Field—	Past Week	Prev. Week
Greenwood	20,640	20,980
El dorado	16,715	16,730
Elbing and Peabody	8,125	8,185
Rainbow Bend	8,490	9,000
Fox-Bush	4,965	4,980
Augusta and Douglas	3,095	3,185
Blankenship	2,875	2,890
Florence and Covert	2,420	2,435
Other Fields	18,695	18,320
Totals	86,020	86,705

Oklahoma

Tonkawa	96,450	105,070
Burbank	70,210	70,850
Bristow	52,820	53,000
Osage (outside Burbank)	41,520	44,790
Cromwell	45 250	42,650
Cushing	24,590	24,830
Okmulgee	26,100	25,050
Stroud	4,890	5,585
Hewitt	19,000	19,090
Healdton	12,920	12,955
Gilcrease-Papoose	17,400	15,610
Duncan and Walters	8,995	9,010
Wewoka	10,910	10,113
Other fields	80,050	79 000
Totals	511,105	518,595

Wyoming-Colorado

Salt Creek	65,000	67,940
Teapot	2,160	2,400
Big Muddy	3,630	3,670
Grass Creek	3,220	3,225
Elk Basin	1,065	950
Rock River	3,650	3,370
Lance Creek	1,235	1,375
Poison Spider	660	610
Lost Soldier	5,630	4,735
Craig, Colorado	1,380	1,340
Other fields	3,380	2,970
Totals	91,010	92,585

Montana

Kevin-Sunburst	5,120	5,175
Cat Creek	3,745	3,860
Miscellaneous	95	95
Totals	8,960	9,130

California

Los Angeles, Calif., Nov. 8.—The daily average production of California fields the past week, compared with previous week, with number of producing wells in several Los Angeles Basin fields, was about as follows:

	This Week	No. Prod. Wells	Prev. Week
Long Beach	132,000	496	134,500
Santa Fe Springs	54,000	348	55,000
Huntington Beach	40,000	289	41,500
Torrance	48,000	460	49,750
Dominguez	32,000	26	32,750
Rosecrans	3,400	8	1,950
Others	290,600		284,550
Totals	600,000		600,500

Louisiana

Field—	Past Week	Prev. Week
Haynesville	16,400	16,700
Caddo Light	9,700	9,600
Caddo Heavy	1,830	2,010
Homer	7,035	7,015
Bellevue	4,010	4,050
Vinton	6,140	5,900
Bull Bayou	4,700	4,800
Cotton Valley	12,865	7,500
Lockport	1,400	1,400
Elm Grove	670	700
Evangeline	830	736
Edgerly	500	405
Anse La Butte	25	20
Totals	66,105	60,926

Arkansas

Field—	Past Week	Prev. Week
Smackover Heavy	73,350	74,060
Smackover Light	32,400	33,610
El Dorado	10,600	10,800
Stephens	2,170	2,230
Irma	1,400	1,410
Totals	119,920	122,110

Texas

NORTH-CENTRAL

Field—	Past Week	Prev. Week
Richland	21,650	22,650
Electra	19,940	19,510
Corsicana-Powell	70,597	71,470
Archer County	32,100	30,980
Mexia	23,845	24,000
Stephens County	17,470	17,630
Burkburnett	17,510	16,960
Reagan County	7,265	7,410
Ranger-Eastland	6,320	6,630
Desdemona-Gorman	5,600	5,540
Young County	4,075	4,050
South Vernon, Wilbarger Co.	2,510	2,320
Moran-Shackelford County	2,955	3,160
K-M-A	2,990	2,950
Currie	3,550	2,600
Mitchell County	1,570	1,650
Panhandle District	1,340	1,545
Callahan County	1,475	1,470
Iowa Park-Shappell	1,350	1,340
Palo Pinto County-Strawn	710	705
Brown County	710	730
Petrolia-Clay County	345	350
Thrall-Williamson County	85	80
Jack County	25	30
Coleman County	75	25
Scurry County	10	15
Totals	246,072	245,800

GULF COAST

Spindletop	1,310	1,280
Saratoga	1,510	1,475
Batson	1,650	1,625
Goose Creek	10,850	11,300
Sour Lake	4,200	4,200
Hull	15,750	16,200
Big Creek	5,500	5,925
West Columbia	12,710	13,000
Humble	4,925	4,850
Pierce Junction	310	300
Blue Ridge	850	800
Orange	10,675	10,600
Damon Mound	1,245	1,242
Markham	90	90
Dayton	65	60
Hockley	20	20
High Island	40	50
Nacogdoches	110	110
Barbers Hill	150	150
Totals	71,980	73,277
Luling	35,000	35,000
Mirando	7,200	5,000
Somerset	4,100	3,000
*Misc. South Texas	1,250	1,200
Totals	47,550	44,200
Grand Totals	365,602	363,277

*Includes Callahan, Rockdale and Minerva.

Condensed U. S. Production for Twelve Months

(Stated in Barrels)

This table is carried each week by The OIL WEEKLY, and shows dail production average for each state or section. Figures for Oklahoma, Kansas, Texas, Louisiana, Arkansas and Mountain States are compiled by The OIL WEEKLY, while estimates for California and Eastern States are furnished by the American Petroleum Institute.

Daily average for month	*Mid-Continent	North Central Texas	Texas Coastal	Texas Total	Kansas	Okla.	Louisiana	Eastern States	Wyo. Mont. and Colo.	Calif.	Ark.	U. S. Total
August	726,981	217,208	105,966	323,148	89,998	419,775	97,936	120,750	83,938	375,000	28,834	1,618,765
September	716,107	207,467	107,790	314,932	89,760	418,880	101,857	114,200	80,490	387,000	33,135	1,540,371
October	714,906	200,465	115,130	316,370	90,404	424,037	97,502	116,375	86,412	423,750	34,127	1,489,005
November	711,521	199,223	114,150	388,376	91,098	421,200	93,410	116,375	106,092	450,000	77,225	1,668,776
December	692,702	170,187	111,819	242,010	87,508	435,007	86,513	114,900	103,679	484,000	107,732	1,722,349
January (1923)	708,372	184,885	115,628	304,790	86,720	436,767	81,205	113,500	123,254	517,500	111,920	1,770,645
February	712,007	180,364	96,984	286,493	85,298	446,345	78,068	112,500	110,328	587,500	101,346	1,805,496
March	720,287	184,582	89,873	283,355	86,012	449,693	75,352	109,900	118,580	653,000	108,630	1,888,522
April	756,381	192,148	92,320	293,780	86,133	478,100	76,854	106,000	127,860	711,250	102,099	1,983,026
May	793,774	203,776	90,905	304,032	85,500	504,498	75,368	109,125	125,680	700,125	109,033	2,010,840
June	824,297	217,162	92,240	320,250	85,255	521,880	72,745	110,300	129,559	773,000	133,592	2,159,818
July	866,665	274,330	91,795	378,335	84,785	508,405	70,085	113,000	137,300	851,000	132,395	2,275,305
August	826,982	278,574	94,398	393,780	82,741	464,416	68,739	112,625	137,909	866,250	123,000	2,251,966
September	830,517	371,730	93,649	443,461	77,078	421,763	68,935	108,400	157,742	858,700	127,955	2,269,176
October	876,059	408,036	84,120	511,483	71,362	371,657	65,305	107,750	139,912	823,125	125,145	2,240,741
November	935,975	479,383	82,747	580,700	69,337	287,253	64,701	108,125	151,225	768,275	124,188	2,253,806
December	729,591	283,130	78,033	378,478	68,444	378,017	61,138	110,300	146,770	723,845	120,045	1,987,041
January (1924)	685,540	243,120	75,085	334,485	67,815	374,605	59,125	108,000	144,735	698,965	114,255	1,900,985
February	729,933	254,180	81,131	362,849	68,183	407,568	59,449	104,500	141,775	675,425	114,726	1,934,476
March	762,684	284,874	78,567	388,221	69,864	407,946	55,783	97,800	128,352	650,790	119,869	1,917,023
April	777,590	276,595	76,755	380,005	71,015	429,980	54,740	101,250	127,700	649,825	128,750	1,943,270
May	763,320	267,475	74,175	374,915	71,490	424,355	60,655	103,800	127,770	640,930	148,630	1,952,545
June	799,230	260,785	74,333	375,310	74,265	464,175	62,660	105,750	125,735	628,400	157,165	1,993,465
July	815,830	254,665	75,445	378,365	81,545	479,620	63,855	107,175	124,305	620,175	148,655	2,003,695
August	861,640	254,520	75,700	377,045	85,765	521,355	62,595	107,000	123,895	619,200	142,740	2,037,890
September	886,650	253,243	76,953	366,197	86,758	546,647	62,162	107,622	117,345	611,500	131,343	2,029,580
October	855,823	247,222	75,713	359,861	86,884	521,717	62,493	106,600	107,270	605,060	123,235	1,972,902
November 7	843,197	246,072	71,980	365,602	86,020	511,105	66,105	106,500	99,970	600,000	119,920	1,955,222

*Includes North Central Texas, Kansas, Oklahoma.

NOTE—Mexia production included in North Central Texas.

Imports of Petroleum at Principal United States Ports

The following represents the total imports of crude oil for the month with the current month given by weeks:

	Atlantic Ports						Gulf Coast Ports					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	N. Orleans Baton Rge.	Port Arthur Sabine Pass	Tampa	Total	Total at All Ports
October	365,000	292,000	1,194,000	536,000	816,000	3,203,000	988,000	1,330,000	380,000	50,000	2,248,000	5,951,000
November	223,000	395,000	1,194,000	576,000	757,000	3,145,000	1,478,000	1,000,000	551,000	111,000	3,287,000	5,432,000
December	474,000	574,000	1,243,000	606,000	1,024,000	3,917,000	2,019,000	1,832,000	933,000	259,000	5,043,000	8,960,000
January	398,000	531,000	1,060,000	376,000	949,000	3,314,000	1,295,000	887,000	689,000	15,000	2,936,000	6,250,000
February	520,000	527,000	639,000	458,000	771,000	2,865,000	1,558,000	1,284,000	525,000	195,000	3,562,000	6,427,000
March	802,000	734,000	1,243,000	502,000	1,668,000	5,049,000	2,346,000	1,689,000	1,116,000	301,000	5,257,000	10,281,000
April	653,000	664,000	1,371,000	407,000	1,067,000	4,162,000	1,641,000	1,492,000	510,000	68,000	3,711,000	7,873,000
May	693,000	618,000	1,368,000	264,000	1,329,000	4,272,000	1,398,000	1,308,000	884,000	169,000	3,759,000	8,031,000
June	515,000	466,000	1,864,000	292,000	1,026,000	4,163,000	1,769,000	1,079,000	685,000	145,000	3,678,000	7,841,000
July	375,000	260,000	1,971,000	179,000	1,114,000	3,899,000	1,418,000	1,211,000	579,000	153,000	3,361,000	7,260,000
August	463,000	400,000	1,958,000	468,000	788,000	3,945,000	1,857,000	1,210,000	547,000	80,000	3,694,000	7,639,000
September	372,000	191,000	767,000	330,000	762,000	2,422,000	1,048,000	1,300,000	580,000	87,000	3,025,000	5,794,000
October	665,000	.....	1,588,000	136,000	224,000	2,590,000	658,000	1,090,000	285,000	70,000	2,103,000	4,643,000
November 1	.....	132,000	74,000	200,000	79,000	485,000	483,000	245,000	252,000	.....	980,000	1,465,000

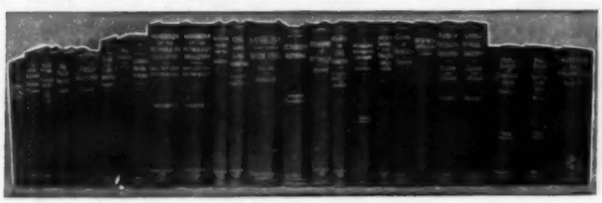
NOTE—Figures by American Petroleum Institute.

Receipts of California Oil at Atlantic Coast Ports

The following shows the receipts of California oil at Atlantic Coast ports by months with the current month given by weeks:

	Atlantic Ports						Gulf Coast Ports					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	N. Orleans Baton Rge.	Port Arthur Sabine Pass	Tampa	Total	Total at All Ports
October	779,000	224,000	2,503,000	779,000	429,000	4,714,000	.....	746,000	.....	.....	746,000	5,460,000
November	591,000	155,000	2,302,000	584,000	271,000	3,903,000	.....	935,000	.....	.....	935,000	4,838,000
December	454,000	215,000	2,901,000	813,000	753,000	5,136,000	.....	729,000	.....	.....	729,000	5,213,000
January	619,000	77,000	3,156,000	659,000	503,000	4,660,000	.....	615,000	.....	.....	615,000	5,275,000
February	326,000	145,000	2,811,000	842,000	75,000	4,199,000	.....	810,000	.....	.....	810,000	5,009,000
March	298,000	77,000	3,352,000	989,000	413,000	5,129,000	.....	.....	.....	.....	.....	5,129,000
April	170,000	77,000	2,633,000	378,000	224,000	3,482,000	.....	.....	.....	.....	.....	3,482,000
May	190,000	147,000	2,771,000	411,000	273,000	3,792,000	.....	315,000	.....	.....	315,000	4,107,000
June	522,000	147,000	2,490,000	443,000	220,000	3,822,000	.....	.....	.....	.....	.....	3,822,000
July	167,000	70,000	2,017,000	374,000	188,000	2,816,000	.....	75,000	.....	.....	75,000	2,891,000
August	400,000	.....	2,914,000	288,000	520,000	4,354,000	.....	30,000	.....	.....	30,000	4,384,000
September	290,000	220,000	2,020,000	227,000	81,000	2,938,000	.....	.....	.....	.....	.....	2,938,000
October	378,000	217,000	1,997,000	215,000	160,000	2,967,000	.....	.....	.....	.....	.....	2,967,000
November 1	.....	.....	513,000	164,000	.....	677,000	.....	.....	.....	.....	.....	677,000

NOTE—Figures by American Petroleum Institute.



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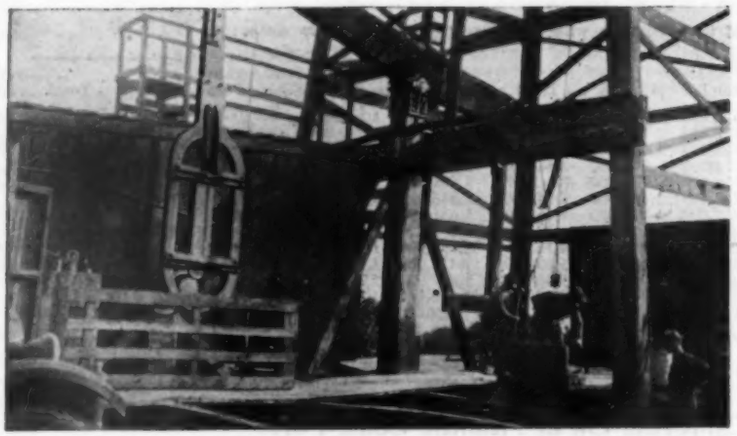

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Wichita, Kansas

Operators So Far Hit Hard at Rosecrans

(Continued from page 51.)

out a show of any consequence. The Union's test on the tract held in trust for the employes of the Union has passed 5600 feet without a show. This test makes a big acreage look bad.

Several Near Completion

Six or seven tests in the general vicinity of the high gravity producers have found the sand, but they are having trouble in cementing off the water. As these producers decline so fast and it is so much trouble to complete them, it is not expected that the production on January 1 in the Rosecrans field will exceed 7500 barrels a day, if that total is reached.

Abandon Deep Wildcat

The Pacific Oil Company this week abandoned its No. 1 Baldwin in the northern part of the Baldwin hills after reaching a total depth of 6755 feet. The only oil show found was at 3904 feet, but nine months was spent in trying to cement off the water at this depth, without success. The hole will be abandoned and the crew and machinery will be moved to the site selected for No. 2 Baldwin. The Pacific has a lease on 1377 acres in this vicinity, which will link up with the Inglewood field, if a producer is completed. The Standard Oil Company has one producer in the Inglewood field making around 100 barrels a day.

Production Off Again

Production, daily average, in the Los Angeles Basin, the past week was off about 6500 barrels. Once more every one of the six important fields showed a decline, except Rosecrans. Long Beach was off about 2500 barrels a day, although several workovers were brought back to production. Santa Fe Springs lost 1500 barrels a day and Huntington Beach declined 1500 barrels. Torrance was off 1750 barrels a day in the face of several completions. Dominguez only lost 750 barrels a day.

Los Angeles Shipments

Los Angeles, Calif., Nov. 8.—Only 22 tankers left Los Angeles Harbor the past week, but three going to Atlantic domestic port (Bayonne) with none to Atlantic foreign. It is indicated that fewer shipments are to be made in the future to the Atlantic domestic coast since a number of tankers are past due back, if they intended coming back. The record for the past two weeks, in barrels, is as follows:

	Past Week	Prev. Week
Tankers departed	22	28
Total crude moved	935,363	1,281,475
Total fuel moved	515,204	499,532
Total gasoline	12,390	302,203
Total kerosene		10,516
Crude, Pacific domestic	655,325	261,600
Fuel, Pacific domestic	333,015	269,221
Gasoline, Pacific domestic	12,390	79,132
Crude, Atlantic domestic	235,038	604,347
Gasoline, Atlantic domestic		
Crude, foreign	45,000	65,000
Fuel, foreign	182,159	230,311
Kerosene, foreign		8,096
Gasoline, foreign		223,071

Oklahoma Still Above Half-Million Barrels

Decline recorded in week's production small as compared to state's total

By W. Lee Sloan
Staff Representative

Tulsa, Okla., Nov. 11.—With Oklahoma production figures fluctuating around a daily average output of ten thousand barrels above the half million barrel mark for the past five weeks, the total loss for the week just passed of seven thousand barrels does not have much effect upon the situation.

At a time when the Tonkawa deep sand wells are showing a daily loss and the Cromwell area putting forth every effort to hold it's own, two probable pools in the state now loom up as a stimulus to increase the daily average of the state.

The successful completion of the Independent Oil and Gas Company well in section 6-15-6 in Lincoln County and the Magnolia Petroleum Company's No. 3 Altaffer well in the old Otoe pool in Pawnee county are the two wells which operators are now watching with interest.

The Independent well in Lincoln County is producing approximately 130 barrels per day from what operators think is the Burgess sand. A rather peculiar circumstance in this new discovery is the fact that the Stroud pool production, just eight miles away, is coming from the Wilcox sand while the Davenport well of the Magnolia Petroleum Company, also a distance of eight miles in another direction, is supposed to be getting its production from the Bartlesville sand. The total depth of the Independent well is 3787 feet and it is located on a 900 acre block owned by the company.

The production in the Magnolia well in the Otoe or Watchorn pool, is coming from a deep sand, the total depth of the well now being 4030 feet. No. 3 Altaffer is located in section 3-22-3 and its daily production is now 2400 barrels per day. This well was deepened 11 feet to get this amount of production, the previous figure being 600 barrels per day.

The Watchorn field in Pawnee is not a new field as gas wells have been reported from the area as far back as 1916. But the Magnolia Company and the Watchorn Oil and Gas Company, owners of the entire producing area, have had a rather difficult time in finding the big production. So far there have been ten producers from the Wilcox sand in the pool and no water is reported in any of them. An endeavor is now being made by the two companies to extend the field to the southwest, each having a well drilling in that end of the field.

California Order

A rumor was prevalent in Pawhuska last week to the effect that some company in California had placed an order with a Tulsa brokerage firm for the purchase of 500,000 barrels of Oklahoma crude with a gravity spread of from 32 to 39 degrees. The brokerage firm was authorized to pay as high as a 25 cent premium for this oil. This rumor might be discounted to a great extent on account of the large spread in the gravity requirements but taking into consideration the low gravity output of the California fields, with the exception of the Rosecrans district, it is not improbable that the rumor might have some foundation. It was not learned whether the deal was consummated or not.

With the Tonkawa deep sand and the Cromwell wells commanding the major part of the interest, it is more than likely that some students of the situation have overlooked the rapid decline of the Osage County fields outside of Burbank. The Osage district second-break-in-the-Mississippi-lime pools had an unusually high flush production total only a short time ago. Today the total output of all of these pools is approximately 13,775 barrels. This total is below the production of the one lease of the Marland Company in the southeast quarter of section 20-23-8 three months ago. The Atlantic pool in township 25 range 8 is possibly the only one of the Osage County pools that could increase the production much as all the others are well defined on all sides and each well is declining in its daily output.

Tulsa, Oklahoma, Nov. 12.—The premium on Garber crude was advanced 15 cents today, making the price for that oil 40 cents above the highest price posted by the Prairie Pipe Line Company and the Sinclair Crude Oil Purchasing Company. Garber crude has commanded a 25 cent premium in the past.

This field, which yields the highest quality of oil in Oklahoma, has daily output of 5000 barrels from 550 wells. Most of the field is controlled by the Sinclair Oil and Gas Company. Independent refiners buy this crude wherever possible, taking much of the royalty oil.

Look for Connections

As evidenced by the action of one of the major purchasers in the Okmulgee district allowing their connection solicitor to openly compete for connections to new wells, the different companies have instructed all scouts to be on the lookout for new production and to make a report immediately to the home office of any new possible crude oil being brought to the surface.

The thirty-ninth deep sand well for the Tonkawa pool has been brought in by the Pennock Oil Company on the Endicott lease, No. 3-D, located at the southwest corner of the southeast of section 34-25-1w, topped the deep pay at 4304 feet. Drilling in 19 feet, the well started off with a flow of 190 barrels per hour. This is one of the largest wells yet found in the deep sand area. The Comar Oil Company No. 5-C Endicott in section 34-25-1w, which stopped producing after reaching a maximum production of 4600 barrels on September 1st, has again started to produce and is reported making 176 barrels per day. Total production from the deep sand is now 74,170 barrels from 39 wells.

The fortieth deep sand well has just been completed by the Comar Oil Company in their No. 3-D Endicott, southwest corner of the southwest of the southeast of section 34-25-1 west. The well topped the sand at 4304 feet and after drilling to a total depth of 4330 feet, it was gauging 3250 barrels per day.

The Magnolia Petroleum Company Davenport well in the southwest corner of the southeast of section 34-15-5e, Lincoln County, sprung a surprise during the week when it flowed for one hour at the rate of 50 barrels per hour, immediately after taking the 24 hour gauge which showed that it had produced 137 barrels during the 24 hours previous to the 50 barrel per hour flow. This well is the wildcat completion of Flynn and Morgan which was purchased by the Magnolia company some time ago. Production is from the Bartlesville sand.

Two apparent failures are reported from the Cromwell field. The Gardner Petroleum Company and the Carter Oil Company No. 8, center of the southeast of the northeast of the southwest of section 9-10-8 found a dry sand at 3378 feet and picked up a shale at that depth. Their No. 7, center of the northeast of the northeast of the southwest of the same section, picked up a seven million cubic foot gas sand and drilled through the sand at 3374 to 3426 feet without oil production. Both wells were supposed to be on proven acreage. The Waite Phillips Company No. 1 Dunn, the most northern well in the Cromwell field is now making 55 barrels per hour from 20 feet in the sand found at 3436 feet. This well is located in the north half of the southeast of section 4-10-8.

The newest well on the west line of production in the northwest extension

of the Cromwell field is the Gypsy Oil Company No. 1 Willis, southeast of the northeast of section 8-10-8, which is making 3200 barrels per day from a total depth of 3476 feet. The Tidal-Osage Oil Company well in section 17-10-8, a west side well, is reported to have stopped producing while the same company's well in section 14 has declined to a daily production of 1490 barrels and cutting one per cent b. s.

In the Papoose pool, E. L. Robinson and the Amerada Petroleum Corporation No. 3 Carter, in the southeast corner of the northeast of the northwest of section 4-9-9 is reported producing 30 barrels per hour from the Papoose sand at 3316 feet. The new producer brought in by the Gypsy Oil Company in the northeast extension of the pool, southeast corner of the southwest of the southeast of section 34-10-9, made 1461 barrels on an 18 hour test. In the first hour the well made 85 barrels per hour and it is now making 60 barrels an hour.

Holm and Jarvis are expected to open a new pool in Seminole County which will develop a connecting link between the Wewoka and Cromwell pools when their No. 1 Cobb in the northeast corner of the southeast of the northeast of section 7-9-8, is completed. The Gilcrease sand was topped at 3275 feet in the well and the company is now pulling the big pipe, preparatory to drilling in.

Marland Official Party Visiting Big Lake Field

Fort Worth, Texas, Nov. 10.—E. W. Marland, head of the Marland interests, accompanied by a party of directors and officials, passed through Fort Worth Monday night enroute the Big Lake oil field in West Texas in connection with contract closed last month in New York City for the purchase of crude from the Texon Oil and Land Company and the Big Lake Oil Company. The partw is traveling in a private car, and after visiting the Big Lake field will go to Texas City, where Marland interests have an export station that will be enlarged to handle the crude that is to be purchased from the Big Lake field.

A visit to several Gulf Coast fields is also planned for the party, while the Corsicana-Powell field will be toured on the up state trip to Marland's district offices at Dallas.

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R E S U L T S

Cotton Valley and Irma Fields Show Increases

Shreveport, La., Nov. 10.—Following are the essential statistics relating to production from the two newest fields of the Louisiana-Arkansas territory during the quarter just closed. Both fields, Irma and Cotton Valley, are showing a steady increase in activity:

	Cotton Valley	Irma
Present average production	12,865	1,400
Total crude on hand in field storage as of November 1	227,140	189,375
Total pipe line runs during month of October	194,075	*39,315
Daily average	6,260	1,268
Total pipe line runs during month of September	172,129	*30,600
Daily average	5,738	1,200
Total pipe line runs during month of August	174,047	*13,850
Daily average	5,614	447

*Represents deliveries via tank cars; there are no pipe lines in the Irma Field.

Gulf-Atlantic Merger Rumor Denied

Pittsburgh, Pa., Nov. 8.—No credence whatever is placed here in the report in press dispatches that a merger between the Gulf Oil Corporation and the Atlantic Refining Company is under way or has been proposed.

"Oil News of Canada," a semi-monthly journal published in Vancouver, B. C., came forward November 1 as the season's debutant among the Oil Industry publications. The initial issue, an eight page edition, has a "punch" to its news and editorial matter, and The OIL WEEKY extends a toast of "More power and prosperity to the newcomer!"

B. T. McNeil, secretary of the Swiftsure Petroleum Company for the past five years and closely associated with Mills Bennett of Houston, independent operator, during his career as an oil man, was made vice president of the company is a meeting of the directors held October 30.

Coring Adopted For Wilbarger Drilling

Leases being blocked around abandoned wildcats which showed oil and gas in past

By H. H. King
Staff Representative

Wichita Falls, Texas, Nov. 11.—The spectacular performance of five of the six tests drilled to the 2000-foot broken sand in the South Vernon field, Wilbarger County, during the past two months has forced both major companies and independent operators to revise their opinions that the county has been condemned for any new fields by the 100 or more abandoned holes drilled in previous years. Wilbarger County's petroleum history has been somewhat identical with that of Archer County, as both have been producing oil for years along the county line bordering on Wichita County, and heavy wildcat drilling campaigns staged in each county from four to seven years ago resulted in encouraging traces of oil and gas but producing wells could not be found at any great distance from the Wichita County line.

Wilbarger County threatened to redeem its disappointing wildcat history in 1920 when the Zigler well was completed, but only one small pumper was added by the drilling flurry that followed the completion of the Zigler well, although good shows of oil and gas were reported in many of the tests drilled. Archer County began working back into the good graces of oil producers in 1921 when the Texhoma-Gose pool was discovered, and when the Freeman-Hampton Interests uncovered the Feguson field in August of the following year with an offset test to an abandoned hole, the turning point in Archer County's petroleum history was made. The development of these two fields in Archer County brought out new ideas in completing semi-shallow wells drilled with rotary equipment, and proved that good flowing and pumping wells could be had from the unusually thin sands if proper methods were adapted in completing the wells.

Since the discovery of the Texhoma-Gose and Ferguson fields, Archer County has added a half dozen of more new pools each year, and the average will run considerable higher this year.

Using the South Vernon field and the actual results obtained through the redrilling of Archer County as a basis, the North Texas operators are reasoning that Wilbarger County can be made to produce oil around abandoned wildcat tests that logged good sands with showings of oil and gas, and are now obtaining wildcat drilling blocks in Wilbarger County to defy the past history of the county with modern drilling methods. Logs of abandoned holes in Wilbarger County and members of the drilling crews on these tests are being consulted regarding any sands bearing traces of oil or gas that were passed up, just as has been done in Archer County during the past year or two, and wildcat drilling blocks are most desirable around such tests, since many of the holes were drilled with rotary and pay formations were easily overlooked. The use of the core barrel in connection with rotary drilling in recent years has played an important part in the discovery of new fields, and the core barrel is now in general use in the North Texas fields, while in previous years wildcatters drilled into the sand with rotary and tried to bail in a well.

Lines Going In

As evidence that the major companies anticipate important developments resulting from the redrilling of Wilbarger County, Humble Pipe Line Company is building 52 miles of four and six inch line to the South Vernon field with only a few small leases in this field available for connections, while the Sinclair and the Texas companies are also building lines to the field from the Electra district. The Waggoner Refining Company was the first to announce a pipe line for the field, and is now running oil through its line, which was completed early this week. A total of 116 miles of pipe will be used in these four lines, and any one of the lines can handle the total production of the field for several months to come, even though big wells are obtained from tests now nearing the 2000-foot level.

W. B. PINE
Of Okmulgee, Oklahoma. One of the largest independent operators in the State of Oklahoma, President of the Burns Tool Company and Director of the Okmulgee District Oil and Gas Association. Elected as U. S. Senator from Oklahoma at election November 4.

An unusual number of completions registered in Archer County during the past three weeks has boosted the production of the county to about 32,100 barrles daily, and new drilling getting underway on proven leases assures further increases in production. The Ragle district, which has been the source of extra large wells lately, is being defined by tests drilled in advance of production, and during the past week failures registered by Humble, Eagle Creek, Jones & Mitchem, Krog et al, Muse et al, Lee Wilson and Featherstone and Johnson greatly reduced the potential limits of this producing area. The flush has not been removed from the proven section of the district, and 300 to 500 barrel wells are still coming in.

Upper Young County added a new shallow pool last week when Litchfield & Madden's R. Campbell 1, located about two miles southeast of the Ragle field and four miles east and north of Olney, flowed through drill pipe after encountering broken sand from 1039 to 1047 feet, and is estimated good for 100 barrels daily. It is located in the northwest quarter of sec-236. The deep lime in the Graham section of Young County was extended last week to the northeast several miles when the Simms Oil Company's V. M. Willis 1, section 2047, flowed by heads after drilling lime pay at the 3900-foot level, and will probably be given a shot before completing.

Stephens and Eastland Counties are slow in responding to the recent favorable turn made by the crude market, and offer very little acreage for profitable drilling at present low crude prices, since the flush has been taken off most of the deep fields. In the North Caddo field, Stephens County, Walker, Samuels & Stewart's fifth test on the First National Bank fee land is flowing 200 barrels natural while awaiting shot in regular lime pay at 3110-70 feet. A semi-shallow producer was completed north of Eastland on the W. F. Davenport lease, section 8, by Hart and others with an initial flow of 80 barrels at 1860-72 feet.

Mammoth Stock Sells Low

New York, N. Y., Nov. 8.—A block of shares of Class A common stock of the Mammoth Oil Company, said to total 131,839 shares, was sold this week at the Vesey Street Auction Sales Rooms in New York at 50 cents a share. When listed on the curb this stock sold for $50 a share.

Corsicana-Powell Storage Reduced to New Low Level

Corsicana, Texas, Nov. 11.—Extending the Currie field, Navarro County, several locations to the southwest, A. C. Smith, B. Strotman and others J. N. Morrow 1 blew in last Friday with a flush production of 315 barrels of oil during the first hour after drilling Woodbine sand four feet to 3174 feet, but soon settled to about 3000 barrels total for the first 24 hours. Salt water and basic sediment began showing soon after the well came in, and early this week it was making less than 2000 barrels of pipe line oil. It is located on a lease recently surrendered by The Texas Company after drilling two deep dry holes on the east end of the tract. Pipe line connections were made by Humble to purchase the oil, which is the usual high gravity crude found in the Currie field. Trapshooter Reilly has announced that an offset will be started on the south immediately, while J. K. Hughes is expected to make new locations on the north line of the Smith et al lease.

Crude stocks in the Corsicana-Powell district are being drawn on, and during October stocks were reduced 475,475 barrels to a new low level of 8,873,000 barrels, leaving approximately 2,410,000 barrels of empty storage facilities. Pipe line runs from the Corsicana-Powell field during October amounted to 2,276,450 barrels, or a daily average of about 73,110 barrels as compared to a daily average of 77,960 barrels during September. This decrease in runs is largely due to natural decline of old wells, while heavy production heretofore obtained from wells flowed artificially with air is declining rapidly. At the close of October there were 10 wells flowing by air with a combined daily production of 4,185 barrels, while on November 8 the number of wells on air had dropped to seven, with a combined daily production of 2840 barrels. At one time this field reported 36 wells on air with an average of more than 1000 barrels of oil daily per well.

Eclipse Deepwell Pulling Machine

Weight

Safety Standard up to 2000 ft. 2" Tubing Weight.....3075

Safety Special up to 3000 ft. 2" Tubing Weight.....3385

Weight

Eclipse Std. up to 2000 ft 2" Tubing Weight.....2785

Eclipse Special up to 3000 ft. 2" Tubing Weight.....3000

Eclipse Deepwell up to 8000 ft. 2" Tubing Wt. 3645

Wreckers also made to order, approximate weight 5000 lbs. One of our customers stated that he has pulled a weight equal to 100 tons with one of these machines.

Specifications Deep Well

Mast 8x10x36 ft., Douglass Fir A-Style, Two Wheel Truck, two 16" Bronze bearing crown pulleys, 2¼ Steel Pin mounted in malleable boxings. Large supporting plate 16" dia. between crown pulleys, eliminating any chance of bending pin.

Reel or Drum: 32 lb. 8¼ casing filled with concrete for winding drum, differentials banded with 3/16 band iron, brake surface 6"x40", choke brake style same as star drilling machine.

The whole reel assembly is mounted on 2¾ square steel shaft extending clear through reel, secured by three heavy castings.

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INDEPENDENCE, KANSAS

Marland to Drill Test in Hunt County

Corsicana, Tex., Nov. 10.—The Marland Oil Company has ordered abstracts to cover its block of leases in the southern part of Hunt County, and indications are that drilling operations will be begun at once. In this connection, it has been reported that a deed has been filed in the records of Hunt County whereby a lease broker named Pickens, who assembled the Marland's block, acquired the Phoebe Bauknight tract of 377½ acres, Jas. Hamilton Survey, for a consideration of $35.00 per acre. This sale is being accepted as a possible clue to the location at which the proposed test will be drilled.

The Gulf Production Company is drilling deeper after having cored a salt water sand at 2963 feet in its S. M. Cannon No. 1, on the Robert Ragsdale Survey, Hunt County. It is said that the Gulf will drill to a total depth of 3400 feet in this well before moving farther south for its next well on this block.

The Marland Company is drilling at 2600 feet in its Kelly wildcat, in the northwest corner of the Greenlee Headright Survey, in Kaufman County. The log of this well is checking about the same as that of the Rand well drilled by the Boyd Oil Company. The Marland Company has purchased an additional 400 acres of leases adjoining its Kaufman County block on the west, paying therefor a price of $25.00 per acre. Its core drilling machine is being used at locations ranging from 600 to 800 feet north and northwest of Kelly No. 1. The Gulf has been buying additional protection in this vicinity.

The Boyd Oil Company is drilling at 2400 feet in its Thompson wildcat, Jacob Barkman Headright Survey, in Bowie County. A core was taken from a salt water sand at 2379 feet.

The Mission Oil Company is drilling at 2475 feet in its Nelson No. 2, Nancy Dycas Headright, Bowie County.

The Texas Company is drilling in red shale at 3670 feet in its Jack Wortham wildcat, in the most southerly southeast corner of the S. W. Hough Headright Survey of Hopkins County.

Magnolia Company Pipe Line Movements Show Large Increase During October

Dallas, Texas, Nov. 10.—Magnolia Petroleum Company's daily crude runs from various fields in Oklahoma, Kansas, Texas, Louisiana and Arkansas averaged 74,769 barrels during October, as compared to a daily average of 69,035 barrels during the month previous. The 5,734 barrel gain in daily average runs made in October is largely due to increased purchases and production in the Wewoka-Cromwell district and Bristow field, Oklahoma, and common carrier oil handled from the Luling field in Texas. Magnolia's total runs during October from the Wewoka-Cromwell district jumped above the half million barrel mark for the first time, and averaged 16,800 barrels daily from this district during October as compared to a daily average of 13,413 barrels in September.

Total crude runs made by Magnolia from the above five states during October aggregated 2,317,836 barrels, with 1,315,491 barrels of this amount furnished by Oklahoma and Kansas fields. These figures also include all oil produced by Magnolia in the five states, amounting to about 39,000 barrels daily.

Since the addition of more than 100 miles of loops to Magnolia's trunk line system connecting the Oklahoma-Kansas fields with its principal refinery at Beaumont several months ago, a more active campaign has been waged for flush production in Oklahoma fields. Magnolia's runs from Oklahoma and Kansas fields during October averaged 42,435 barrels daily, as compared to a daily average of 38,883 barrels during the month previous, and daily runs are now crowding pipe line facilities. Stocks of heavy grades of oil held by Magnolia in Oklahoma tank farms have been reduced in recent months and transferred to surplus steel tankage in the Mexia district, while a large quantity also went to the Coast for fuel oil. Crude stocks held in Oklahoma and Kansas fields by Magnolia at the close of October amounted to 9,489,605 barrels, or a gain of 139,510 barrels over the month. The gain was largely due to heavy purchases of light oils in the flush fields, and more than offset the reduction of stocks of heavy crudes.

Storing in Oklahoma

Magnolia's daily runs in the Wewoka-Cromwell district exceeds pipe line facilities, and oil is being stored at the rate of two 55,000 barrel tanks each week. Tank building crews have been at work constantly for Magnolia in this district since last summer, and have completed 23 55,000 barrel tanks, of which 21 are filled with crude, and work is now well underway on the 24th tank. Others are to be added as long as crude purchases and production exceed pipe line facilities, and lately Magnolia has been making use of dismantled tanks obtained from its Cobden tank farm in the Corsicana-Powell district. The Cobden tank farm was acquired early this year with considerable crude from the Cobden Fuel Company, and at the time of purchase contained 25 55's. All but 12 of the Cobden tanks have been dismantled, while crews are now engaged in tearing down the balance at the rate of three per week.

Crude runs from Texas fields by Magnolia during October were increased about 100,000 barrels over the totals for the previous month. The daily average for October amounted to 29,522 barrels, with more than one-half of this coming from the Luling district and the Electra-Burkburnett district. Total runs from Luling during October were reported at 380,081 barrels, and some of this amount represented common carrier tonnage for a Luling producer to the Coast to be loaded aboard tankers and shipped to an Atlantic Coast refiner. Stocks of light gravity crudes held by Magnolia in North and Central West Texas fields were reduced only 20,967 barrels during October to a total of 2,727,769 barrels.

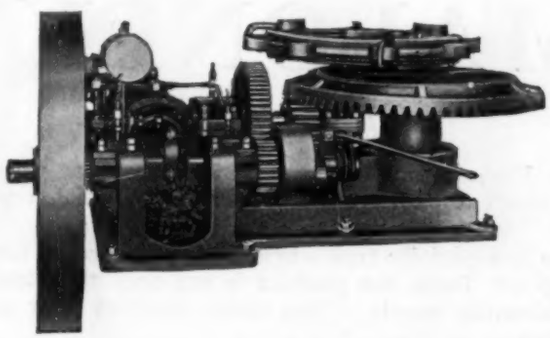
Water Shipments

Tanker shipments of fuel oil, refined oils (gasoline, kerosene and lubes) and crude made by Magnolia during October were unusually heavy due to the channel connecting its loading docks with the Gulf of Mexico having been blockaded late in September and part of the first week in October by a partially burned lumber freighter. Water shipments made to foreign countries and also to the East Coast by Magnolia during the past three months follow:

	Fuel Oil (Gallons)	Refined Oils (Gallons)	Crude (Bbls)
August	11,299,309	33,185,055	290,129
September	4,383,521	17,558,649	187,927
October	11,726,891	42,803,944	395,992

Magnolia Petroleum Company's crude runs by fields for September and October follows:

Fields—	September Totals in Barrels	October Totals in Barrels
Wewoka-Cromwell	402,392	520,797
Healdton	214,279	201,419
Cushing	178,078	155,544
Hewitt	133,735	135,982
Yale	92,046	92,092
Duncan	68,962	70,135
Bristow	190	63,930
Augusta	36,918	36,874
Cement	29,011	28,478
Walters-Beaver Creek	10,897	10,240
Totals for Okla., Kansas	1,166,508	1,315,491
Luling	325,799	380,081
Electra and Burkburnett	266,764	270,951
Corsicana-Powell	37,201	63,429
Mexia	49,285	53,361
Desdemona-Gorman	40,087	42,280
Mirando	34,170	35,266
Stephens County	29,616	32,464
Ranger-Olden	17,764	18,572
Corsicana (heavy)	10,460	10,615
Petrolia-Clay County	5,173	5,596
Thrall-Williamson County	2,653	2,395
Coleman County	324	176
Totals for Texas	819,296	915,186
Totals for Arkansas	57,570	58,133
Totals for Louisiana	27,678	29,026
Grand total for 5 states	2,071,052	2,317,836



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Winter Weather Has All But Stopped Development Work in Mountain Area

Denver, Colo., Nov. 10.—With the approach of colder weather and the closing in of winter in this section field activity has begun to show a slump that will become even more noticeable as the present year comes to a close. The Texas Production Company, developer with Transcontinental Oil Company of the Moffatt pool in Moffatt County, Colorado, has announced the shutting down of all operations in Wyoming and it is expected this order shortly will be extended to include Colorado. Up in Montana the Ohio Oil Company already has suspended operations in some districts.

Within the last several weeks there has been rather a rapid decline in the crude oil recovery in the Rocky Mountain states, due chiefly from the fact that the normal slowing up of the wells in the settled areas has been hastened somewhat by the coming of inclement weather. The easing off is a natural one, however, and is not to be confused with recent press dispatches that erroneously stated that wells in the Salt Creek field in Wyoming had virtually ceased flowing due from a collapse in gas pressure. The changing over from producing to pumping wells has been going on in the Salt Creek field for some time and a large number of companies, including Kasoming Oil, Midwest Refining Company and others have spent millions of dollars in equipping their leases to pump.

The fact that the gas pressure is easing off in the wells in this section need not be alarming any more than is the fact that it is easing off every day elsewhere in the country, particularly in the flush fields of California and the Mid-Continent.

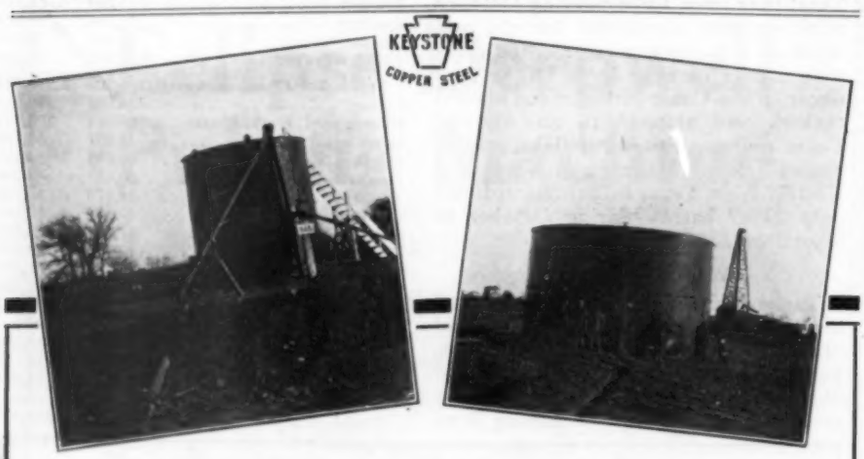
More than ordinary interest is being centered at this time in the test well of the Roland Oil Company of Bristow, Oklahoma, being drilled on the Longmont dome in Boulder County, Colorado. The location of the well is section 34-2n-69 and is known as Johnson No. 1. The well already has been carried down below the 5000 foot level and drilling has not ceased. The hole has cut several sands on its way down but apparently the Dakota sand has not yet been penetrated. The Roland Oil Company also is putting down another test well in Colorado.

The gas well of the Utah Oil Refining Company being drilled by the Midwest Refining Company in section 25-20-21 on the Cisco fold in Grand County, Utah, which was extinguished as a burning gasser some weeks back now is making slightly more than 10,000,000 cubic feet of gas daily. This is quite a decrease from the original estimate of the flow of the well before it became ignited which was placed at upwards of 80,000,000 cubic feet. The control valve is to be installed as the tools have not been run back in the hole since the well fired.

Another test on the Cisco fold is to be put down by the Midwest Refining Company for the Utah Oil Refining Company which will be located in section 30-20-22, about half a mile from the discovery well. The derrick is going up and it is expected that drilling will commence before the close of the month. The Utah Oil Refining Company is also making preparations to drill a test on the Vernal structure between Vernal and Jensen in the Uintah Basin country in section 23-58-22e.

Interest in New Mexico loomed up again during the last week with the announcement of the purchase by the Mutual Oil Company of a half interest in an Indian lease on approximately 4800 acres on Rattlesnake dome in the Navajo Indian Reservation. The deal was closed by the Santa Fe Oil Company and the S. C. Munoz interests who held the properties on which are located five wells producing upwards of 500 barrels daily of 64 gravity oil. The deal was closed in Denver last week.

As a result of this transaction it is likely that New Mexico will soon have its first real refinery in operation as the deal between the Santa Fe Company and the Mutual provided for the construction of a plant at Aztec or Farmington which is to be the terminus of a pipe line that is to be built jointly by the two companies from the Rattlesnake dome country.



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Cotton Valley Development Work on Increase; Production Shows Gain

Shreveport, La., Nov. 10.—The Humble Oil & Refining Company's Bodcau B-3, offsetting the Louisiana Oil Refining Corporation's Gray extension well near the center of section 28-21-10, Cotton Valley Field, was completed last week with an initial production of 3,200 barrels of pipe line oil per day from twenty feet of sand at a total depth of 2,584 feet. This well topped the sand about six feet higher and was drilled two feet deeper, below sea-level, than the Louisiana's offset well. The latter is still flowing around 575 barrels of pipe line oil per day through a string of 2½-inch tubing set on a packer.

The other important wells in the Cotton Valley Field are holding up rather well, with the result that the field's daily average production shows a marked increase during the week just closed. The Louisiana's (Invincible) Lindsey well continues to make around 1,500 barrels of oil per day, net. The Humble's Davis gusher, in section 24-21-10 of the eastern extension, is flowing around 7000 barrels of fluid per day, of which 50 per cent is oil. Moffet & Murphy's Pardee No. 2, in the same vicinity, is making approximately 6000 barrels of fluid per day, of which 45 per cent is oil.

A number of new wells are being started in both the eastern and southwestern extensions; and the development campaign is steadily gaining headway. Several important lease deals have been made; and trading in royalties is becoming active, for the first time. The Alabama Petroleum Company has purchased from O'Brien & Jones, of Shreveport, an eighty-acre lease described as the south half of the northwest quarter of section 19-21-9. The consideration paid is said to total $25,000.00, of which $10,000.00 was paid in cash. The tract adjoins the lease on which is located the Pardee gusher, drilled by Moffett & Murphy and the Alabama Petroleum Company. The Humble Oil & Refining Company is said to have acquired a lease on forty acres described as the southeast quarter of the northeast quarter of section 34-21-10, paying therefor $175.00 per acre in cash and $175.00 per acre out of oil. It is reported that the Tidal Oil Company, of Oklahoma, is to begin drilling soon on a forty-acre tract recently purchased from J. K. Wadley for a consideration of $500.00 an acre cash and $750.00 out of oil. The tract is described as the southeast quarter of the northeast quarter of section 28-21-10, and is located only a quarter of a mile east of the two wells drilled by the Louisiana and the Humble, near the center of the same section, which now mark the southwestern limit of the productive area.

Daniels and Roscoe have set six-inch casing and will make a test soon at 2390 feet in the Pollack wildcat in section 36-11-14, of the De Soto Parish, formerly the property of the Greyhound Syndicate.

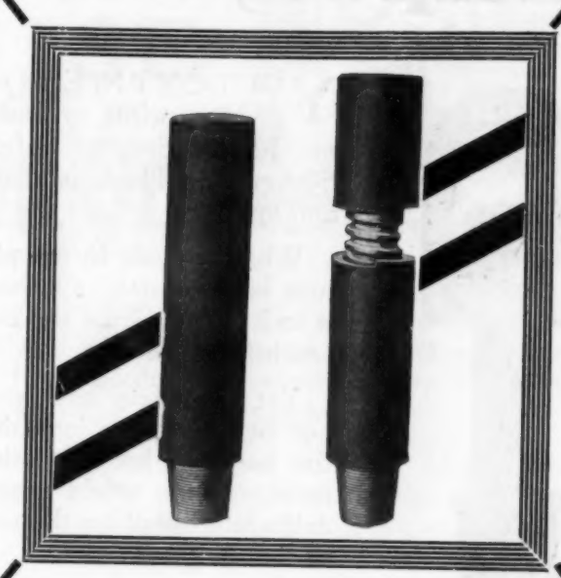
Shreveport, La., Nov., 12.—Bellevue crude was advanced 25 cents a barrel today by the Standard Oil Company of Louisiana. It's quotation is now $1.35 a barrel.

Production at Bellevue is around 4000 barrels daily. It is a heavy oil used for making lubricants.

Oil and Gas Area Found in Galacia

Washington, D. C., Nov. 10.—A new petroleum and gas field has been discovered in Galacia, occupying almost the entire district of Sobniow, according to information just received by the petroleum division of the Department of Commerce. Approximately 28 test wells are being drilled and some oil has been struck at 700 meters, as compared with 1500 meters at Boryslaw. Gas is present in large quantities, some deposits showing a large benzine content. The field, however, will probably not be an important crude oil producer, but is expected to yield about 26,250,000 cubic meters of gas annually per well, from which it is estimated 2,625,000 kilos of gasoline may be derived.

LOOSENS FROZEN PIPE—
BAASH-ROSS SAFETY JOINT



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Season Puts Stop to Deep Drilling in Ontario Fields

Calgary, Alta., Nov. 10.—With the 1924 season drawing to a close, drilling operations in the Ontario fields have settled down to a few shallow tests, chiefly intended to replenish the dwindling gas supply. Deep drilling is at an end for the time being. The past year, since the much-touted deep oil discovery in Romney township, Kent County, has been marked by a succession of deep tests, none of which have developed any production. The Glenwood-Shanks well, which started the boom with a reputed production of 200 barrels a day, itself speedily settled down to a small pumper, making at best between 20 and 30 barrels a day from the bottom of the Trenton; and this, taken with the drilling of dry holes in all directions from the discovery well, indicates that the latter merely tapped a small pocket of oil.

On the lake front near Port Alma the Union Natural Gas Company is finishing a test for gas on the Carr farm. A small production in the Tilbury sand is looked for. In Norfolk County, the Dominion Natural Gas Company is drilling No. 1 well between Courtland and Mabee's Corners and has a location for No. 2; these are also tests for gas, which should be struck around 1500 feet. The town lot shallow oil test of the Caledonia Oil & Gas Company in Tillsonburg is shut down; but the E. P. Rowe test north of Thamesville, in Kent County, is reported still drilling.

The latest development in the Canadian West is a reported oil production in the foothill district of southeastern British Columbia. The Crow's Nest Oil Company has been drilling intermittently for something like four years on Sage Creek in the Flathead district, not far from the north fork of the Flathead River. This is an area several times previously tested and in which fair showings of shallow oil have been quite often encountered, though the broken and faulted formations appear to militate against a large field. The Crow's Nest well seems to have drilled itself in at about 2960 feet; the unconfirmed reports stating that while the test was shut down waiting for a new cable, oil rose to within 500 feet of the top of the casing. Official confirmation of the report is lacking.

In the Irma-Wainwright field Maple Leaf Oil & Gas Company's No. 1, sec. 24-45-8w4, is tubing, and will likely be finished as a gas well. No. 2 is reported to have spudded in on the same section. British Petroleums No. 5 is reported to be spudding in this week, a short distance southeast of No. 4. Pumping equipment is being installed for a capacity test of Nos. 2 and 4 wells; while No. 3, sec. 29-45-6w4 has been cemented, and will be brought in as soon as the cement is hard enough. British-Wainwright Oil Company, sec. 22-45-6w4 is ready to spud in.

Southwest of Calgary, in the Okotoks field, the Royalite Oil Company is still working to get No. 4 gasser under control. When the casinghead blew off the casing was lifted and then dropped in the hole and the drillers are trying to get the damaged casing out.

Tulsa, Okla., Nov. 8.—F. E. Bernsen, vice president of the Lucey Manufacturing Corporation, reports that on behalf of contractors and operators shipping rotary outfits from field to field via railway transportation, the matter of classification has been taken up with the Western Classification Committee, who are responsible for the classification of railway shipments and that effective January first the Classification Committee has agreed to remove the limitations restricting more than one boiler being shipped with car loads of oil well supplies.

In the past operators and contractors shipping rotary outfits were allowed only one boiler with a shipment. The one or more additional boilers were charged a less than car load rate. The new ruling will permit one, two or three boilers being included in an outfit, all of which will bear the same car load freight rate.

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Boyd Oil Company Caps Test Showing Gas from Woodbine Sand Near Wortham

Mexia, Texas, Nov. 10.—Gas produced from the top of the Woodbine sand in the Boyd Oil Company's wildcat test on the N. B. Boyd land early last week when the bit was allowed to penetrate the pay a few inches after drilling cement plug at 2960 feet has materially boosted the prospects of a producing structure being developed along the Mexia fault near the town of Wortham and between the Mexia and Currie fields. This area has been the scene of an active leasing campaign in recent weeks, with unusually high prices being offered for leases and royalties by many of the participants of the Mexia and Corsicana-Powell flush fields, and all desirable acreage has been leased solid including town lots in the east edge of Wortham. After assuring themselves that the test was in the Woodbine sand, officials of the Boyd Oil Company ordered the hole capped, while in the meantime a second wildcat test drilled by the same company closer to Wortham has reached a depth of 2900 feet, and it will also be shut in after a core test is made of the Woodbine.

With two wildcat tests down to the expected pay depth, Col. Humphreys of Mexia fame, who is president of the Boyd Oil Company, will probably carry out a double header program in trying for oil production on the Wortham structure, and present plans are not to drill in either of these tests for thirty days, owing to crude market conditions. Since members of the American Petroleum Institute are scheduled to visit the Corsicana-Powell and Mexia fields during their convention at Fort Worth on December 9, 10 and 11, it is believed that Col. Humphreys will delay the completion of the two tests to add interest to the visitors' tour of the East Central Texas fault region. Before the Boyd Oil Company's second test cements casing and shuts down, an Elliott core barrel will be sent about 40 feet into the Woodbine sand to determine definitely if production can be counted on when the test is drilled in and completed.

The wildcat play now being given the Wortham structure is the second one to occur since the discovery of the Mexia and Currie fields, and indications tions are that the initial effort for production was west of the fault and two tests were drilled a short distance too far east. Geological information uncovered through the previous efforts of wildcatters in this section of the Mexia fault zone added to information on subsurface conditions revealed by the four tests now underway in the Wortham area is responsible for the widespread belief among the major companies and independent operators that a producing structure will be developed.

The position of the fault was established about three weeks ago when the Boyd Oil Company logged only 28 feet of Austin chalk formation from 2723 to 2751 feet, with a surface elevation of 463 feet, while the normal thickness of this chalk is about 450 feet. Indications are that the Boyd test is in the fault, and only nicked the base of the chalk body. The Boyd Oil Company's Roy Simmons 1, located about one and one-half miles northeast of the Boyd test, logged the Austin chalk from 2224 to 2564 feet, with a surface elevation of 431.43 feet, indicating that it may also be at the fault. The Boyd test was drilled with rotary to 2960 feet, and 6⅝-inch casing was cemented at 2956 feet. Standard tools will be used to complete the hole. The Simmons test reached the 2900-foot level late last week, and is now idle pending the arrival of an Elliott type core barrel from California. It is planned to rathole into the Woodbine sand with this core barrel to a depth of about 40 feet, and if the core is favorable casing will be set and cemented while everything will be made shipshape to drill in with cable tools next month.

Carter and Lytle, who obtained a good show of oil from the Woodbine sand last spring from their wildcat test on the Hackney land in the Wortham area and now concede the test to be slightly too far east for production, are

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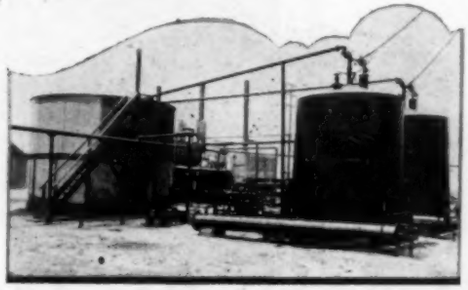

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still fishing drill stem at 1681 feet after having experienced a gas blowout in their second test. The gas blowout was obtained from a sand at 1400-1500 feet, and gauged 21 million cubic feet, but bridged the hole. This second test is located on the J. J. Manning farm, just east of the railroad and about three-quarters of a mile southeast of the Simmons test. On the north end of the town of Wortham a wildcat test is being drilled by John Hooser and others on the J. J. Stubbs land, and is due to encounter the chalk this week.

The Boyd Oil Company holds about 500 acres in small tracts south and southwest of Wortham, and the royalty interest covering most of this acreage has been acquired jointly by Col. Humphreys and the Boyd and Trinity Companies. Other lease owners include Carter and Lytle, John Hooser et al, Humble, Marland Oil Company of Texas, Kirby Petroleum Company, Pure Oil Company, Gulf, Sun Oil Company, Atlantic Oil Producing Company, Texas and a few others. Prices varying from $300 to $500 per acre have been paid frequently since interest became aroused in the area, but such prices do not prevail on remotely located acreage, as the operators are playing for a long narrow structure, possibly somewhat like Currie and Richland in size.

Wildcatting efforts in the fault region extending northeast of the Corsicana-Powell field are offering very little encouragement, if any, for continued search for producing structures, and The Texas Company is preparing to abandon its second deep test drilled this year in Hopkins County. It is on the Jack Wortham farm, Samuel W. Hough survey, and at last reports was drilling below 3600 feet. In Bowie County, the Boyd Oil Company's C. H. Thompson 1, Jacob Barkman survey, tested salt water in broken sand at 2381 feet after logging chalk from 1546 to 2070 feet with a surface elevation of 342.4 feet. Salt water was also encountered in the wildcat test of E. B. Guest and others on the A. Hooks land, John Barkman survey, at 2112 feet.

In Franklin County, J. C. McNeill and associates have abandoned their wildcat test on the J. C. Harper farm, J. S. Clift survey, after drilling considerable hard sand to 3020 feet with no encouraging show of oil or gas. Marland Oil Company's third try for production in the East Central Texas fault region is now underway in the east edge of Kaufman County on the G. W. Kelley farm, Green Lee survey, and late last week had not reached the Austin chalk after drilling to 2320 feet. Gulf Production Company's wildcat test in the south half of Hunt County and on the C. M. Cannon farm, Robt. Ragsdale survey, is coring hard sand at 2930 feet.

The Bankers Trust Company's wildcat test on the McCormick farm, located about 18 miles northwest of Corsicana, caused some lease buying on nearby acreage when a good looking sand, which appears to be the Woodbine, was logged at 1740 feet. The crew was ratholing in the same formation at 1830 feet late last week, with no oil in evidence. The Austin chalk was logged by this test from about 595 to 1000 feet.

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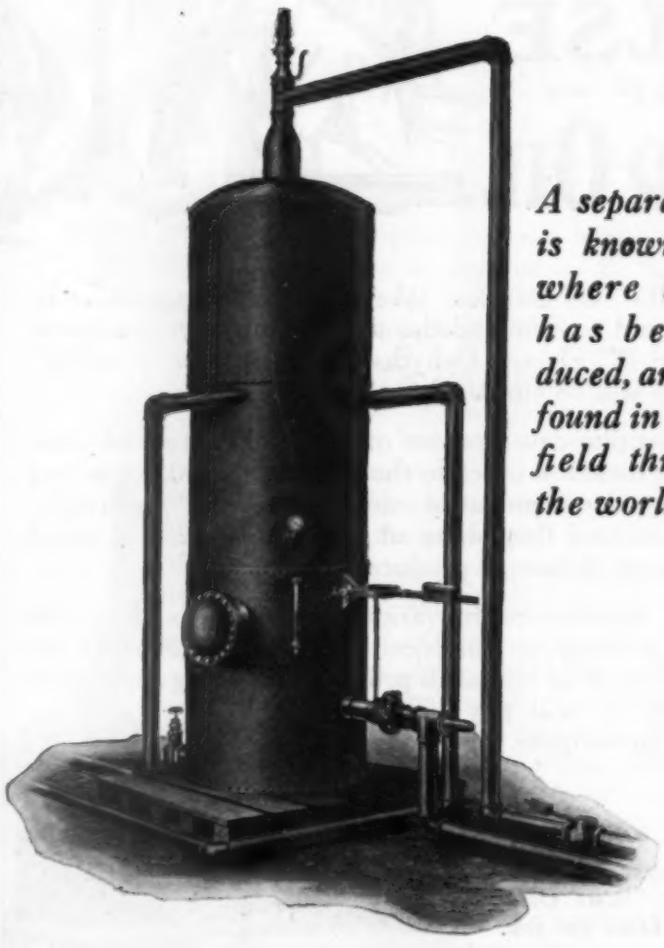

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New $2,000,000 Dutch Oil Company Organized

Washington, D. C., Nov. 10.—A new petroleum company has been formed at Amsterdam under the name of Petroleumondernemingen Gartenberg en Schreier, by representatives of Hope & Company and the Niederosterreichische Escompte-Gesellschaft, reports to the petroleum division of the Department of Commerce state. Hope & Company are to take 20,000 and the other company 80,000 shares in the new concern, which will participate in commercial and industrial petroleum enterprises, in the foundation of companies and factories in connection therewith, in the "Jaslo" Mineralolwerke Gartenberg and Schreier Aktien Gesellschaft at Jaslo, as well as in its affiliated companies, and also it will take charge of the possessions outside of Poland of the old firm of Gartenberg en Schreier at Jaslo.

The capital of the new organization is 5,000,000 guilders (about $2,000,000) in 500,000 10-guilder shares, of which 100,000 have already been placed.

Completions for Past Week in U. S. Fields

Summarized Review of Field Results

State—	Completions This Week	Completions Last Week	Producers This Week	Producers Last Week	Gas Wells This Week	Gas Wells Last Week	Failures This Week	Failures Last Week	Initial Production This Week	Initial Production Last Week
Oklahoma	78	88	39	55	11	9	28	24	19,903	29,467
Kansas	1	17	..	5	..	1	1	11	.....	1,655
Texas	94	59	58	28	3	3	33	28	9,425	6,316
Arkansas	10	9	6	7	..	1	4	1	405	330
Louisiana	10	9	1	4	7	3	2	2	3,200	10,655
Eastern States	154	147	84	93	45	33	25	21	1,348	3,677
California	20	12	20	12	..	..	..	..	6,465	3,575
Totals	367	341	208	204	66	50	93	87	40,746	55,675

Note—Following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million cubic feet of gas; abn—abandoned; bbls—barrels; b. s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; lcn—location; m—milling; N. S. E. W.—North, South, East, West; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudded; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—under reaming; wo—workover; wosr—waiting on standard rig.

Texas

ARCHER COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Roy I. Carter et al J. H. White 2-C.	30	1617
J. H. White 9-E	175	1619
J. H. White 10-E	150	1612
J. H. White 11-E	180	1599
C. H. Clark & Harbin L. Echols 2.	105	1331
L. Echols 3	90	1335
Consolidated & Panhandle Ref. Co. C. L. Davis 3-A	300	1087
C. L. Davis 1-B	400	1085
W. J. Ragle 5-B	60	1095
W. J. Ragle 1-E	350	1091
Dee Bros. et al J. H. White 1-B	30	1614
Featherstone & Johnson G. W. Vernon 1	*	1505
Grisham & Parks C. L. Davis 2	460	1082
Gulf Prod. Co. T. B. Wilson 1	*	2002
C. B. Jetter et al J. H. White 1-B (Blk. 41)	260	1580
Jones & Mitchem Beardon Estate 1	*	1120
Kentucky Oil Corp. et al W. F. Parrish 6-C	*	1620
Krog et al E. A. Hausler 1	*	1205
Lowery & Cavin Harbinson 4	230	1335
Maer & Standiforth T. L. Griffin 2	300	1276
Magnolia Pet. Co. W. F. Parrish 4	50	1595
Maxwell et al J. R. Parkey 2	*	1753
Melat & Graham Richardson-Goldsmith 2	100	1350
Richardson-Goldsmith 3	95	1352
Murchison-Fain et al T. L. Griffin 1	250	1320
Muse et al J. A. Kunkel 1-A	*	1505
Petroleum Prod. Oil Co. M. E. Rogers 1	220	1281
M. E. Rogers 2	300	1276
Waite Phillips L. F. Wilson 3	*	1900
Ramming & Saunders Andrews 1	*	1025
Robertson-Ross et al J. H. White 9	140	1609
Saunders & Taylor J. L. Logan 2	65	1254
F. E. Skinner et al G. W. Dugan 1	*	1812
Staley & Wynn et al K. & K. 1	*	1902
Sun Oil Co. P. C. Green 2	300	1084
Swastika Oil Synd. Richardson 3	115	1361
Underwood Drilling Co. M. E. Rogers 1	350	1294
Lee Wilson et al Beardon Estate 3	*	1106
Beardon Estate 4	200	1075
Beardon Estate 5	*	1133
Woodburn Oil Corp. (Simms) L. F. Wilson 12-A	100	1621
L. F. Wilson 13-A	60	1626
World Publishing Co. Herron 1	*	1510
Consolidated & Panhandle Ref. Co. W. J. Ragle 5-D	700	1094
Daniels et al J. H. Lester 1	*	1550
Dee Bros. et al J. H. White 2	*	1635
Hart et al Cowan-Turbeville 1	*	2050
Holmes & Haskell's Wilson 2	*	1650
Humphries et al J. H. White 6	90	1614
Jefferies et al T. B. Wilson 1	*	1668
John Lane et al J. H. White 2	115	1615
Maer & Staniforth's T. L. Griffin 3	225	1282
Murchison-Fain & Marland Oil Co. Harmel 1-C	300	1279
L. F. Wilson 3	*	1645
T. A. Norwood et al J. B. Miller 1	*	1605
Waite Phillips' L. F. Wilson 2	35	1539
Robertson-Ross et al J. H. White 4	350	1596
Shamrock Oil Co. J. L. Anderson 1	*	1603
G. M. Boren 2	*	1645
Richardson 12-B	120	1323
T. O. Shappell & Sons' K. & K. 8-B	*	1790
Texhoma Oil & Ref. Co. E. A. Hausler 2	1075	1129

ELECTRA

Company, Well and Location	Initial Production Bbls.	Depth
Camp Oil & Gas Co. L. P. Douglas 12-B	45	1944
Gordon Oil Co. Burnett Estate 2	*	676
P. F. Gwynn et al Waggoner Bros. 1	*	2003
Texhoma Oil & Ref. Co. Burnett Estate 6	145	1824
Burnett Estate 11-B	80	1590

Largest Romanian Gasser Completed by Standard

Bucharest, Roumania, Nov. 10.—What is reported to be the largest gusher ever completed in a Roumanian oil field was brought in recently by the Romano-Americano, a subsidiary concern of the Standard Oil Company. The well, which is located at Runcu, is flowing more than 15,000 barrels of oil per day. No well in the country has even been recorded to have flowed as much as the Romano-Americano's new gusher.

Our Mistake

In the first paragraph of the announcement in the November 7 issue of The OIL WEEKLY on the establishment of a fabricating plant in Kansas City by Black, Sivalls and Bryson, Inc., of Bartlesville, Oklahoma, the company's name was inadvertently made to read Black, Sivalls and Brown instead of Black, Sivalls and Bryson, Inc.

Active officials of the company are A. H. Black, Edward Black, James Sivalls, W. G. Bryson and Glen Skinner. All of these except A. H. Black who has made his home in Independence, Kansas, and Edward Black, who resides in Tulsa make their headquarters at Bartlesville, where is located the general offices of the company.

The company manufacturers the well known Perfection vapor pressure tank.

DESDEMONA-GORMAN

Company, Well and Location	Initial Production Bbls.	Depth
Magnolia Pet. Co. W. G. Westmoreland 17	35	2891

K-M-A AND IOWA PARK

Company, Well and Location	Initial Production Bbls.	Depth
Parker Bros. et al Hodge-Putman 1	*	1830
Johnie Tolbert Oil Co. Coleman 15	10	597
Coleman 16	10	583
Coleman 17	15	595

YOUNG COUNTY

Company, Well and Location	Initial Production Bbls.	Depth
Adams, Brown & McAlister W. J. Logan 1	*	1217
Cheney & Anzac Oil Assn. J. A. Driver 5	10	1950
Knight & Hines E. B. Hamilton 1	*	1160
H. E. Neeley 1	*	1535

EASTLAND-RANGER

Company, Well and Location	Initial Production Bbls.	Depth
Grisham et al McDonald 1	*	1590
Hart et al W. F. Davenport 1	80	1872

GULF COAST

Company, Well and Location	Initial Production Bbls.	Depth
Goose Creek—		
Gulf Production Company Paddock-Smith 12, wo.	32	2525
Spindle Top—		
Wilson & Broach Ft. Worth 11	150	745
Batson—		
Paraffine Oil Company B. B. B. & C. 3	10	905
Hull—		
Gulf Production Company Scarborough 7	*	3425
Humble Oil & Refining Company Hannah 1, wo.	*	3500
Sour Lake—		
Lake View Oil Co. Minor 4, wo	*	2940
Blue Ridge—		
The Texas Co. Robinson 12, wo.	250	3780
Big Creek—		
Gulf Production Co. T. W. Davis 9	50	2900
Orange—		
Orange Pet. Co. Winfree 8, wo.	65	3325
Currie—		
Strotman Smith et al Morrow 1	1500	....
Richland—		
The Sun Company Brown 17	360	2940
Swink 1	*	2985
Atlantic Oil Producing Company	300	2990
Powell—		
Simms Oil Company Dill 1	6	1225
Texas-Magnolia I. T. Kent 29	32	1575
Tidal Oil Company Bush 2	125	1250

LULING

Company, Well and Location	Initial Production Bbls.	Depth
Caldwell County—		
United North & South Oil Co. No. 9 Maggie Moore	1750	....
No. 1 Trammel	200	....
Beaver Oil Co. No. 1 Tiller	150	....

MIRANDO

Company, Well and Location	Initial Production Bbls.	Depth
Webb County—		
Olsan et al No. 5	75	....
Nueva Oil Co. No. 3	100	....
Wheatley Oil Co. No. 11	250	....

Louisiana

Company, Well and Location	Initial Production Bbls.	Depth
Caddo Parish—		
Fortuna Oil Co.'s Doan-Thigpen 12, 6-20-15	50	2000
Cotton Valley Field—		
Humble Oil & Ref. Co.'s Bodcau Lbr. B-3, 28-21-10	3200	2584
Ohio Oil Co.'s Bodcau Lbr. 4, 15-21-10	¶45	2535
Total, 2 wells	¶45-3200	
Sarepta-Spring Hill Gas Field—		
Butler-McMurray Drlg. Co.'s Baker 1, 34-23-11	¶30	2678
Waskom Gas Field—		
State Line Oil & Gas Co.'s Waterman 3, Harrison County, Tex.	¶20	935
Waterman 4, Harrison Co. Tex.	¶10	964
Wells et al's Stringfellow 1, 19-17-16, Caddo Parish, La.	¶10	936
Total, 3 wells	¶40	
Monroe Gas Field, Ouachita Parish—		
Southern Carbon Co.'s Fee 40, 7-19-5e	¶35	2140

Arkansas

Company, Well and Location	Initial Production Bbls.	Depth
Stephens Field, Columbia County—		
Magnolia Pet. Co.'s Hammond 2, 25-15-20	30	2109
Smackover Field, Ouachita County—		
Magnolia Pet. Co.'s Patton 4, 31-15-16	30	2270
Simms Oil Co.'s Gaston 4, 30-15-15	100	2025
Smackover Field, Union County—		
Arkansas Fuel Oil Co.'s Dumas 2, 29-16-15	*	2651
Estes et al's Freeman 3, 1-16-17	*	2280
Flo-Ark Oil Co.'s Murphy 1, 36-16-16	*	2300
Magnolia Pet. Co.'s Campete-Campbell 3, 13-16-17	50	2318
Star Oil Co.'s Burton 3, 25-16-16	150	2044
The Texas Co.'s Hayes 1, 4-16-15	75	2007
Total, 8 wells	405	

California

Company, Well and Location	Initial Production Bbls.	Depth
Long Beach—		
Henderson Pet. Synd.'s Hoover 1 (wo)	500	3753
Shell Co.'s Jones 6	425	5000
Coseboom 6	250	4148
Hutton 2 (wo)	525	5000
Horsch 1 (wo)	200	4920
Hawkeye's Sweeney 1 (wo)	200	4433
United Oil Co.'s Haas 10 (wo)	50	3890
Torrance—		
C. C. M. Oil Co.'s Del Amo 30	150	3700
Del Amo 101	100	3550
Pan American's Rhoads 1	100	3800
Standard's Marble fee 22	125	3790
Petroleum Midway's Logan 2 (wo)	50	3780
Crocker Com. 2	50	3450
Gilmore Pet. Corp.'s Leake 1 (wo)	50	3730
Superior Oil Co.'s Joughin 37 (wo)	80	3785
Rosecrans—		
Union Oil Co.'s Rosecrans 4	2400	4226
Chandler 1 (wo)	60	4045
Richfield—		
Chicksan Oil Co.'s Bradford 1	300	4712
La Habra—		
Associated's Haulde 41	250	2674
Midway—		
Pacific Oil Co.'s No. 30, Sec. 25-31-23	600	3391

Oklahoma

Company, Well and Location	Initial Production Bbls.	Depth
Burbank—		
Phillips Pet. Co.'s No. 16, NEc 14-27-5	100	3832
No. 12, C E L SE NE NE 14-27-5	100	3057
No. 4, SEc 11-27-5	200	3040
No. 9, C W L SW NW SE 11-27-5	1000	3021
No. 6, C NE SW NE 18-27-6	200	2967
No. 5, C W½ SW SE 11-27-5	1000	3020
Comar Oil Co.'s No. 3, C NW SE SW 4-27-5	*	1207
Texas Co., No. 7, C NW SE NW 18-27-6	400	2979
Carter County—		
Rockland's No. 5 Dillard, C N L NE SW NW 22-4s-2w	50	2475
Commanche County—		
Kedney et al's No. 3 Hine, C N L NW SW 25-1-9w	¶	1935
Cotton County—		
Continental Oil Co.'s No. 2 Harris, C N L NW SW SW 22-2s-11w	*	3227
Creek County—		
Riverland Oil Co.'s No. 1 Sherrel, C E L SW NE 2-18-11	*	2375
Damar's No. 1 Anderson, C NW SE NE 19-17-9	¶	2760
A. B. Ice's No. 1, Lot 5, Block 22, NWc SW SE 8-16-12	15	2145
Antlers Oil Co.'s No. 1, Lot 12, Block 22, SEc NE SW 6-16-12	*	2022
C. L. McMahon's No. 1 Dunson, C SE SE NW 35-16-9	*	3422
Bilbo et al's No. 1 Adams, C SW SE NE 22-2s-10w	*	3003
Grady County—		
American's No. 5 Farewell, C N L SW SW 23-5-8w	¶	2490
Grant County—		
Marland Ref. Co.'s No. 1 Bonham, NWc NE 11-26-5w	*	4050
Wrightsman Oil Co.'s No. 1 Asher, SWc NE SW 3-26-6w	*	3565
Myers O. & G. Co.'s No. 1 Vallemer, NEc SW 22-25-4w	*	3313
Hughes County—		
Turman Oil Co.'s No. 1, C SW SE SE 5-7-9	*	3523
Kay County—		
McMann Oil Co.'s No. 3 Warren, SE cor SW SE 27-25-1w	*	2560
Marland Ref. Co.'s No. 3 Crazy Bear, C N½ SW SW 17-25-2	*	4035
No. 1 North, C N L SE NW NE 12-26-2w	¶	2543
Comar Oil Co.'s No. 1 Kincaid, SWc NE 21-29-1w	218	1933
No. 2, McCormick, NWc SE 21-29-1w	124	1931
Vernon O. & G. Co.'s No. 2 Brakenhauser, SWc SE 17-29-1	¶	1465
Lincoln County—		
Willis et al's No. 3, Lot 6, Block 3, C W L NW NE NW 12-14-6	100	4140
Logan County—		
A. W. Anthony's No. 3, Lot 2, Block 22, SWc NW SE 8-16-12	*	2135
Humble O. & R. Co.'s No. 1 McCluskey, C NW NE SW 17-16-1w	*	3056
McIntosh County—		
Sands Pet. Co.'s No. 1, SEc SW SE 19-12-14	*	2871
Noble County—		
B. O. & G. Co.'s No. 1 Cronich, SWc 10-21-1w	¶	3428
Comar Oil Co.'s No. 1, NWc SW 11-24-1w	*	4200
Mid-Co Pet. Co.'s No. 11-A Case, C SE NW 29-24-1w	10	2020
Okmulgee County—		
Beams & Wilder's No. 1 Hammond, SEc 1-12-12	*	3072
French & Moffett's No. 2a Hawkins, NEc 7-11-12	8	1270
Morgan's No. 2 Kanar, C SE NE 13-11-13	¶	1302
Osage County—		
Wiser Oil Co.'s No. 1, NWc SE NW 19-28-9	*	2646
Beacon Oil Co.'s No. 4, SWc SE 27-29-11	125	1014
Owen-Osage Oil Co.'s No. 305, C S L SE SW 10-27-11	¶	1861
A. M. Landon's No. 1, SEc SW 1-24-11	15	1767
Osage-Arrow Oil Co.'s No. 8, SEc SW 14-22-10	125	1671
Beacon Oil Co.'s No. 2, SWc NW SW 21-23-8	30	2690
Pawnee County—		
Jim Glenn No. 3 Burgman, NWc NE SE 16-20-6	60	3087
Seminole County—		
Sinclair Oil Co.'s No. 4 Hill, C SW NE NE 9-10-8	2453	3414
Sinclair-Transcontinental's No. 4 Bunner, C SW SW SW 9-10-8	1920	3501
No. 2 Bunner, C NE SW SW 9-10-8	1200	3493
McMann Oil Co.'s No. 3 Baker, C SW NW NW 16-10-8	1400	3520
Carter-Gardner's No. 6 Bunner, C NW NE SW 9-10-8	80	3464
Carter Oil Co.'s No. 3 Roberts, C SW SE NW 16-10-8	419	3502
Cosden O. & G. Co.'s No. 2 Harjo, C SW SW NE 15-10-8	150	3510
No. 1 Toney, C SE SE SW 4-10-8	1000	3435
Waite Phillips' No. 2 Dunn, C SE NW SE 4-10-8	2700	3455
Pure Oil Co.'s No. 2 Bunner, C SE SW SE 9-10-8	120	3496
Kingwood Oil Co.'s No. 1, C SW NW SW 9-9-5	¶	1844
Shaffer O. & G. Co.'s No. 4 Perryman C NE SW NW 32-8-8	1000	3226
Laurel O. & G. Co.'s No. 1 Fixico, C SE SW NW 4-10-8	175	3431
Tidal-Osage Oil Co.'s No. 1 Bunner, C NE NW NE 14-10-8	30	3556
No. 1 Curley, C NW SW SW 14-10-8	2780	3541
Roxana Pet. Co.'s No. 8 Brown, C NE NW SW 10-10-8	155	3515
No. 7 Brown, C SW NW SW 10-10-8	276	3460
No. 1 Berryhill, C NE SE NW 10-10-8	115	3475
Stephens County—		
Continental Oil Co.'s No. 2 Harris, C N L SW SW SW 22-2s-11w	*	3227
Tulsa County—		
Holmes & Benton's No. 1, SWc NE NE 22-19-10	*	2719
Sand Springs Home's No. 1 Woodard, C S L SW NW 6-19-12	*	1900
Thornton et al's No. 1a Berry, C S L SE SW 20-19-12	*	1500
H. A. Jenson's No. 7 Fulsom, C W L SW SW SE 35-19-12	10	1365
No. 8 Fulsom, C W½ SW SE 35-19-12	25	1345
Jenson et al's No. 1 Quinn, SWc 36-19-12	15	1314
Schermerhorn Oil Co.'s No. 2 E. Vann, SEc SW NE 1-20-13	¶	1188
Broken Arrow Gas Co.'s No. 3 Pressley NEc NW NE 1-18-14	*	1384
Bradstreet et al's No. 1, NWc 26-17-12	*	2642
Bartlett et al's No. 2A McHenry, SEc NW NE 1-17-14	*	1330
Schermerhorn's No. 1-A Ingarm, NW cor NE SE 1-20-13	¶	1184
Andrew Erwin's No. 1 Maxfield, NW cor NE 8-20-13	*	1440
Wagoner County—		
Sewell Pet. & Gallagher's No. 1 McIntosh, C E L NE SE 25-17-16	*	1380

Kansas

Company, Well and Location	Initial Production Bbls.	Depth
Finney County—		
Garden City O. & G. Co.'s No. 1 Wann, SEc 36-21-30w	*	2890

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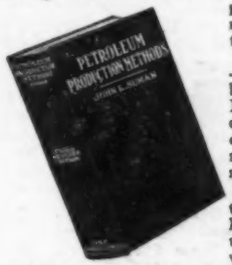

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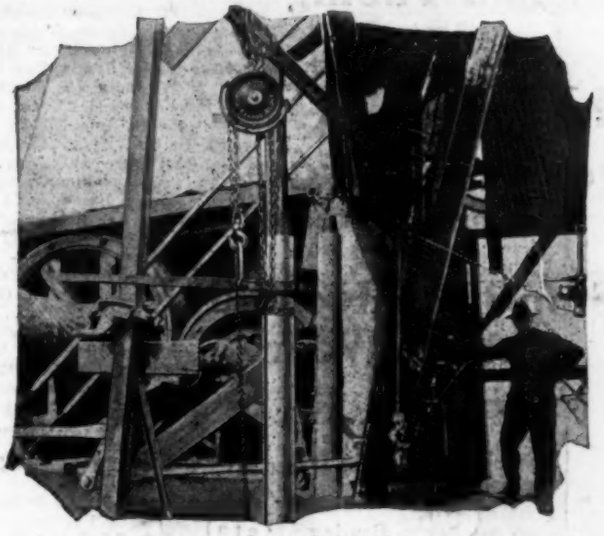

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PENNSYLVANIA

Company, Well and Location	Initial Production Bbls.	Depth
Bradford Field—		
W. J. Healey Emerson 1	3	....
Lilly Estate Middaugh 1	2	....
Devore & Potter Marvin 1	2	....
T. H. Kervin Kay 1	2	....
W. Jones Est. Bingham 1	2	....
Hazlewood Oil Co. Gibson 1	2	....
South Penn Oil Co. Bingham-Satterfield 100	2	....
Ware 76	2	....
Washington County—		
Tague, Lutton & Co. B. G. Lutton 2	400	....

WEST VIRGINIA

Company, Well and Location	Initial Production Bbls.	Depth
Ritchie County—		
Hope Natural Gas Co. M. Golden 1	4	....
Premier Window Glass Co. R. T. Haymond 5	*	....
Doak & Co. T. Lambert 1	¶1¼	....
Marco Oil Co. R. V. McGinnis 1	*	....
Reno Oil Co. G. W. Rossin 2	2	....
Philadelphia Oil Co. E. J. Taylor 1	¶2	....
Hope Const. & Ref. Co. E. A. Cain 1	5	....
Gilmer County—		
Hope Natural Gas Co. Abe Miller 1	¶3	....
R. J. Boggs 1	¶2	....
Hope Const. & Ref. Co. Jermine Ward 1	1	....
Star Oil & Gas Co. A. A. Post 1	*	....
Pittsburgh & West Virginia Gas Co. B. F. Wright 1	¶2½	....
McCall O. & G. Co. Bennett Hrs 1	¶2	....
Marion County—		
Owens Bottle Machine Co. Clayton Heirs 1	25	....
R. A. Michaels 1	¶1¼	....
Carnegie Nat. Gas Co. E. L. Morgan 2	¶½	....
Harrison County—		
Hope Construction & Ref. Co. T. M. Sullivan 1	15	....
Hope Natural Gas Co. G. W. Morrison 1	¶¼	....
Garrett, Lyons & Co. Chas. Lauban 1	¶3	....
Lincoln County—		
Cambridge Gos Co. A. L. Mullen 1	¶2½	....
Roy & McComas Oliver Adkins 5	¶2	....
Columbia Gas Co. Likus Adkins 1	¶1½	....
Wood County—		
Hinds Pavey Hebrank & Kapp 2	5	....
Penn Royal Oil Co. Rapp-Hebrick 1	5	....
Wetzel County—		
Silver Hill Oil Co. D. M. Wade 1	10	....
Schultz & Fahey J. L. Kimball 1	¶2½	....
Roane County—		
United Fuel Gas Co. Susan C. Carper 1	¶2½	....
Morely O. & G. Co. School lot 1	7	....
Tyler County—		
Hope Construction & Ref. Co. A. McIntyre 1	5	....
L. L. Gorrell & Co. Everette Ice 1	¶¼	....
Kanawha County—		
United Fuel Gas Co. James Jarrett 1	¶1	....
Columbia Carbon Co. C. W. Vickers 2	¶1	....
Doddridge County—		
Carter Oil Co. R. W. Williams 1	¶2	....
Hope Construction & Ref. Co. H. B. Williams 5	¶1½	....
Pleasants County—		
Fred D. Meister B. White 16	5	....
Wirt County—		
W. C. Patterson M. A. Donoho 17	4	....
Calhoun County—		
Hope Construction & Ref. Co. L. G. Garrett 1	3	....
Boone County—		
Owens Bottle Machine Co. Cassingham	¶4	....
Marshall County—		
Manufacturers Light & Heat Co. Frank Mackey 1	¶3	....
Monongalia County—		
Martin & Co. N. P. Fetty 1	¶3	....
Brooke County—		
Phister & Sanders J. D. Sanders 1	*	....

KENTUCKY

Company, Well and Location	Initial Production Bbls.	Depth
Barren County—		
Consolidated Gas Co. L. Page 1	¶¼	424
Norris Bros. Duff 2	¶¼	....
Mazel & Co. Neeley 4	10	441
Star Oil Co. Ritchie 11	2	531
Ziegler Bros. & Co. Bradford 1	*	550
Carter Oil Co. Goodrum 2	8	500
Allen County—		
Neil-Huebring Co. Kerley 11	5	280
Bastrus, Johnson & Co. Carver 4	5	299
Bastrus & Barton Bros. 3	*	300
L. D. Robinson Robinson 17	*	....
Warren County—		
Frank Fritz Dr. Moss 5	30	300
Roy Hogan Ben Ford 2	37	467
Olive Green Oil Co. McLemore 8	27	1072
Lawrence-Johnson Counties—		
Indian-Tex Pet. Co. Jesse Rose 7	35	801
J. N. Meeks & Co. N. Lemasters 3	4	811
Wheeler & Brown School lot 1	3	800
Johnson-Magoffin Counties—		
New Domain O. & G. Co. J. H. Gardner 8	25	....
Cooper & Sublet J. Borders 6	5	900
Short Fork Oil Co. H. H. May 6	10	....
Cumberland County—		
Wabash Valley O. & G. Co. Rush 1	*	....
Mason & Co. Parrish 1	*	....
McIntyre & Co. Graves 1	*	....
Lee County—		
Petroleum Exploration Co. Spence Flannery 9	20	....
Chester Gourley 2	13	....
Owensboro District—		
Panther Creek Oil Co. R. Miller 10	8	....
C. E. Daugherty Eliza Ward 1	2	978
Powell County—		
W. E. Hupp Trustee May 5	10	680
Simpson County—		
Brockheimer & Co. Holland 1	6	475
Owsley County—		
Hupp, Duff & Co. Judd 1	4	1400
Green County—		
Wood Oil Co. Waller 1	*	565

SOUTHEASTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
L. A. Phillips & Co. Lindermond 1	2	....
Blair Oil Co. W. Walker 1	2	....
Graham Oil Co. Dan Schekle 2	¶2	....
Peoples Banking & Trust Co. of Marietta Hamilton 1	¶2	....
L. O. Dauber & Co. Dauber 10	2	....
Dutch Oil Co. C. Oliver 13	10	....
Muskingum County—		
Pure Oil Co. W. T. McMillan 3	25	....
J. Ashcraft 2	15	....
Swingle O. & G. Co. J. Cunningham 1	3	....
Columbiana County—		
A. H. Cameron George Shively 1	2	....
Monroe County—		
Bode & Co. B. W. Pratt 1	¶¼	....

CENTRAL OHIO

Company, Well and Location	Initial Production Bbls.	Depth
Wayne County—		
Logan Gas Co. J. W. Horn 2	*	....
William Beard 1	*	....
V. C. Bowman 2	¶2	....
E. G. Klinker 1	25	3300
E. Ely 1	*	....
Baker Bros. S. Whitmore 2	40	....
Ohio Fuel Gas Co. S. Whonsettler 2	20	....
Arthur & Mills E. & G. Myers 3	¶1	....
Daugherty Bros. S. W. Hewil 1	¶1	....
Athens County—		
Bradford O. & G. Co. D. Dunlavey 7	¶1	....
G. T. Stephens Lick Run Coal 2	*	....
Townsend O. & G. Co. Henry Crossin 1	15	....
J. D. Pearce & Co. C. V. Weeden 1	5	....
Pure Oil Co. Howard Figley 1	¶1½	....

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Company, Well and Location	Initial Production Bbls.	Depth
Licking County—		
Dexter O. & G. Co. W. H. Young 2	*	....
Wehrle Interests Len Smith 3.....	5	....
Frank Darnes 5.....	3	....
F. M. Rugg & Co. Jacob Weiss 2..	4	....
Moore & Adams L. T. Stevens 4...	4	....
Hocking County—		
Graham, Baumgardner & Co. M. & T. Hite 7	¶2	....
M. & T. Hite 8	¶2	....
Kelch Bros. Martin Adams 5.....	*	....
Carter Oil Co. Robt. Stone 1.....	*	....
Logan Gas Co. A. B. Lyttle 1.....	*	....
Medina County—		
Logan Gas Co. H. G. Wolf 1.....	¶¼	....
Central Ohio Gas Co. J. & M. Winkle 1	¶½	....
Ohio Fuel Gas Co. E. Yonker 1....¶3¼		....
G. W. Roshon 1	¶2	....
Knox County—		
East Ohio Gas Co. John Nyhart 2	*	....
Snyder & Carson W. P. Bebout 3..	3	....
Walter J. Sperry R. McCament 13..	4	....
Meigs County—		
R. G. Gillespie & Co. J. P. Ihle 1.	5	....
A. B. Cross 2 .....¶1¼		....
Ohio Fuel Supply Co. C. W. Cornell 1	¶1	....
Ashland County—		
Logan Gas Co. Lewis Beck 1.....	¶3	....
W. E. Hawk & Co. Clara Edinger 1	*	....
Jackson County—		
Ohio Fuel Supply Co. Dan D. Evans 1 . .....¶1½		....
Ed. Townsend 1.....	*	....
Perry County—		
Calkins O. & G. Co. W. B. Calkins 4	5	....
Holmes County—		
Central Ohio Gas Co. U. S. Davenport 1	¶2	....
Coshocton County—		
Logan Gas Co. W .Ringwaldt 3....	¶¼	948
NORTHWESTERN OHIO		
Mercer County—		
E. A. Kuhns & Co. C. Ricketts 2..	50	1200
Shirrell & Co. W. Post 1.....	2	1203
Diefenbaugh & Co. A. Able 4.....	5	1142
Gillespie & Co. Able 1.....	*	1150
Lacknett & Co. J. Haubert 1.....	*	1148
Wood County—		
B. Perry Burkhalter 2	8	1401
Melvern Good Merlin Speck 3.....	5	1276
Schiedt, Hamann & Huston C. T. Lee 2	2	1307
Shelby County—		
William Morgan L. Ruesse 2.....	35	1200
Paulding County—		
Roger L. Dull & Co. E. E. Johnson 1	15	1436
Van Wert County—		
W. H. Young & Co. E. R. Jones 2	20	1210
Ottawa County—		
Reynolds Oil Co. Ross Reynolds 1	9	1300
Auglaize County—		
Charles Mertz F. J. Roby 7.....	5	1317
INDIANA		
Jay County—		
American Engineering Co. C. C. Harris 2	50	....
Mesel & Spencer James Jeffries 3..	5	....
Delaware County—		
George D. Roberts J. Cline 5.....	75	....
Adams County—		
Mason & Co. M. L. Sours 2.....	3	....
ILLINOIS		
Clark County—		
Gillette & Co. Echard 3	2	465
Chrysler & Co. R. E. Stratton 1....	*	1600
R. G. Holmes & Co. Charles Lowe 2	20	606
Crawford County—		
Craig, Lowrie & Co. C. J. Weger 16	5	1006
Lawrence County—		
Ohio Oil Co. W. H. Rogers 21....	43	1320
EAST TEXAS		
Panola County Gas Field—		
Askew et al's Brumble 2, Mitcheson Hrs.	¶3	1003
Thomason et al's Vinson 1, Dunlap Hrs.	*	1060
Total, 2 wells	¶3	

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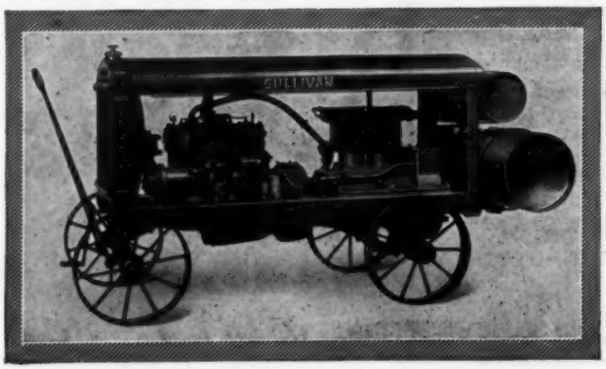

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(California—Kansas—Oklahoma—Texas—Arkansas—Louisiana)

TEXAS

Archer County—J. P. Rayzor's A. B. Edwards No. 1, blk 15, G. Bruner sur, 150 ft to S and W lines. Gulf Prod. Co.'s W. W. Bowers 1, J. M. Taylor sur No. 22, 150 ft to N and W lines; A. P. Nichols 1, sec 30, Amer Trib sur, 150 ft to N and E lines. Roy I. Carter's J. H. White 11, blk 34, Amer Trib sur, 150 ft to S and W lines; J. H. White 12, blk 34, Amer Trib sur, 150 ft to S and E lines. Maer & Staniforth's T. L. Griffin 5, 1600 TE&L sur, 346 ft W No. 3; A. P. Neal 1, A. P. Neal sur, 150 ft to N and E lines. C. B. Jetter's J. H. White 2, blk 41, Amer Trib sur, 154 ft to W and 300 ft to S line. Texas Co.'s B. R. Jeake 2, blk 6, Thos. McCoy sur, 450 ft to E and 150 ft to S line. Mutual Oil Co.'s H. Harmel 1, 2401 TE&L sur, 150 ft to N and W lines. Magnolia Pet. Co.'s W. F. Parrish 7, sec 26, H&TC Ry sur, 150 ft to N and W lines. Lane-Inland Co.'s J. H. White 3, sec 34, Amer Trib sur, 307 ft W No. 1. Trojan Oil Co.'s F. W. Pollei 2, Thos. McCoy sur, 150 ft to S and W lines. Ray & Massie's E. A. Hausler 1, Thos. McCoy sur, 150 ft to N and W lines. Murchison, Fain & Golding's J. A. Wood 1, 2406 TE&L sur, 150 ft to S and E lines; H. Harmel 2, 2401 TE&L sur, 150 ft to W and 205 ft to S line. Panhandle Ref. Co.'s C. L. Davis 1-B, J. Hopkins sur, 150 ft to N and E lines. Shamrock Oil Co.'s N. D. Goldsmith 18, G. P. Diggs sur, 172 ft to W and 472 ft to S line. N. D. Goldsmith et al's F. Young 1, 1810 TE&L sur. Jesse Lincoln's Oil Inv. Co. 1, blk 125, J. W. Harris sur, 300 ft to E and 235 ft to N line. Clark, Harbin & Baldridge's L. Echols 4, blk 12, J. L. Anderson sur, 150 ft to N and 830 ft to E line. McCarty Oil Co.'s L. F. Wilson 4, E. Hall sur, 300 ft W No. 3. Humble Oil & Ref. Co.'s L. F. Wilson 1, sec 78, Amer Trib sur, 2490 ft to N and 150 ft to W line; L. F. Wilson 1, sec 25, Amer Trib sur, 455 ft to N and 150 ft to W line. Ramming, Saunders & Smith's W. L. Andrews 1, W. Spavin sur, 150 ft to N and 450 ft to W line.

Anderson County—Roeser Pet .Co.'s J. D. Vise 1, I. Simpson sur, center.

Bexar County—Alamo Gas Co.'s E. Schiffers 4, west central. Geo. Klemcke's Fee 1, 332 Wm. Klemcke sur, 155 ft to N and E lines.

Brown County—R. E. Gillman's J. W. Newton 2, Wm. Miller sur, 170 ft to E and 1443 ft to S line. F. W. Stone & Co.'s A. G. Gunn 1, 155 W. B. Smith sur, 150 ft to N and 175 ft to W line.

Callahan County—Jno. B. Kindig's L. J. Kelly 1, 2281 TE&L sur, 300 ft to W and 150 ft to S line. Grady Lyda et al's Mrs. A. L. Grant 1, 318 SP Ry sur, 150 ft to S and W lines. Moutray Oil Co.'s E. L. Finley 1, sec 75, Bayland Asy sur, 660 ft to N and 150 ft to W line. Multi-Chance Dev. Co.'s H. Wagley 1, sec 2, D&D Asy sur, 150 ft to N and E lines; H. Wagley 1, sec 2, D&D Asy sur, 660 ft to W and 150 ft to N line. Geo. W. Nicel et al's R. Buchanan 1-A, sec 8, Bayland Asy sur, 150 ft to N and E lines. Kuhlemire-Kleiner Oil Co.'s W. E. Pruett 12, 2278 TE&L sur, 150 ft to S and W lines. J. C. Park et al's Z. C. Wagley 3, sec 2, D&D Asy sur, 300 ft N No. 2; Z. C. Wagley 4, sec 2, D&D Asy sur, 150 ft to E and 750 ft to S line; Z. C. Wagley 5, sec 2, D&D Asy sur, 300 ft S No. 4. Sirmans & Lyda's S. W. Jobe 1, sec 4, Bayland Asy sur, 1600 ft to W and 150 ft to S line. C. J. Thomas' G. H. Clifford 1, 3151 TE&L sur, 150 ft to S and W lines. L. A. Warren et al's W. M. Isenhour 1, sec 7 and 8, Bayland Asy sur, 150 ft to N and W lines; W. M. Isenhour 2, sec 7 and 8, Bayland Asy sur, 300 ft E No. 1; W. M. Isenhour 3, 150 ft to S and W lines; W. M. Isenhour 4, 300 ft S No. 1. Geo. W. Nickel et al's S. M. Davis 3, sec 8, Bayland Asy sur, 250 ft W No. 1. Price & Copeland's Mrs. A. S. Lobban 3, 2995 TE&L sur, 150 ft to W and 750 ft to S line. Dorothy Lane Oil Co.'s Mrs. N. A. Morgan 1, J. J. Hendricks sur, 150 ft to S and W lines. A. J. Breman's W. M. Isenhour 2, sec 7 and 8, Bayland Asy sur, 300 ft S No. 1; W. M. Isenhour 3, 300 ft E No. 1. Junior Oil Co. & McCrea's W. M. Isenhour 1-B, sec 2, Bayland Asy sur, 300 ft to W and 150 ft to S line. H. & S. Co.'s R. D. Williams 1, 2298 TE&L sur, 450 ft to S and E lines. A. C. McDonald's Mrs. A. S. Lobban 2, 2995 TE&L sur, 300 ft N No. 1. Moore, McClung & Green's S. F. Ingram 1, 319 SP Ry sur, 2000 ft to S and W lines. Kuhlemire-Kleiner Oil Co.'s W. E. Pruett 1, 2278 TE&L sur, 150 ft to N and W lines; W. E. Pruett 3, 300 ft S No. 1.

Crockett County — Midwest-Texas Oil Co.'s University 1, sec 14, University Lands sur, blk 50, 400 ft to S and E lines.

Carson County—Gulf Production Co.'s S. B. Burnett 6, sec 106, I&GN Ry sur, 360 ft to N and 332 ft to E line; S. B. Burnett 7, 2258 ft to E and 300 ft to S line.

Eastland County—J. A. Beard's L. B.Bourland 1, Wm. Van Norman sur, 1000 ft to N and E lines. O. A. Payte's J. P. Payte 1, sec 20, H&TC Ry sur, 450 ft to N and 180 ft to W line. States Oil Corp.'s W. P. White 1, sec 47, H&TC Ry sur, 300 ft to W and 225 ft to S line.

Fort Bend County—Rycade Oil Corp.'s W. R. Nash 2, Thos Alsberry sur, 600 ft to N and 400 ft to W line.

Harris County—Jack Martin's Invincible Oil Co. 29, J. B. Jones sur, 35 ft SW No. 1. Gulf Prod. Co.'s Wright 6, Wm. Scott sur, 25 ft to S line and 150 ft E No. 4.

Hardin County—Funderburk & Smith's Hawkins sur, 1935 ft to E and 1326 ft to S line.

Montague County—P. F. Lesh's Mrs. M. H. Salmons 1, S. Little sur, 150 ft to N and E lines.

Milam County—M. Fogle Oil Co.'s G. C. Lucas 1, Burchard sur, 150 ft to N and W lines.

Navarro County—G. C. Kent's Fee 1, J. B. Barry sur, 150 ft to N and W lines.

Parker County—G. E. LeBeaume's B. C. Evans 1, 349 TE&L sur, 150 ft to S and W lines.

Panola County—J. C. McCormick's J. C. Shahan 1, Jas. Ashe sur, 250 ft to S and E lines.

Palo Pinto County—Mike Mihel's T. J. Chenault 1, blk 15, S. Townsend sur, 150 ft S and W lines.

Reagan County — Krupp & Pickrell's University No. 2, sec. 36, University Lands sur, 1320 ft to S and W lines.

Shackelford County — Dabney, Elliott & Chandler's J. F. Pish 2, sec 7, Insane Asy sur, 300 ft S No. 1; Broyles Estate 1, sec 7, Insane Asy sur, 150 ft to N and W lines. W. F. Belcher et al's L. M. Watson 9, sec 36, University Lands sur, 450 ft to W and 750 ft to S line. Dabney, Elliott & Chandler's J. E. Pish 1, sec 7, Insane Asy sur, no lcn. Chas. Steele's W. H. Pritchard 4, blk 21, University Lands sur, 550 ft W No. 1. W. K. Snyder's J. L. Terry 2, sec 45, Insane Asy sur, 500 ft to N and 750 ft to W line. J. D. Meredith's Snyder, Powell & Driscoll 1, sec 32, University Lands sur, 151 ft to N and E lines.

Stephens County—Imbs & Anthony's Mrs. J. C. Nolan 1, 1408 TE&L sur, 300 ft to N and E lines. Mid-Kansas Oil & Gas Co.'s J. W. Hill 15, sec 20, SP Ry sur, 1675 ft to S and W lines; D. Lowe 5, sec 16, T&P Ry sur, 330 ft to N and 1158 ft to W line.

Sterling County—Codgell & Ford's W. L. Foster 1, sec 34, SP Ry sur, 250 ft NW of center.

Upton County—Bell & Reagan's University 1, sec 2, University Lands sur, 1100 ft to N and 660 ft to E line.

Wichita County—Perkins & Cullom's L. B. Burnett 10, SA&MG sur, 150 ft to S and E lines. Frank Harper's J. A. Meyers 1, 37 I&GN Ry sur, 150 ft to N and 750 ft to W line. W. M. Moore's J. A. Kemp 1, D. Welch sur, 150 ft to S line in center. Craig & Mason's S. L. Dennis 2, blk 27, Cowherd Bros. sur, 300 ft W No. 1. Ferguson, Hawkins & Hester, J. A. Watkins 1, 6 W. V. F. L. sur, 150 ft to N and E lines. L. L. & E. G. Boardman's H. G. Karrenbrock 2, Jno. Aldridge sur, 150 ft to N and W lines. Roy I. Carter's S. B. Burnett 4, sec 2, HT&B Ry sur, 300 ft W No. 3. Gulf Prod. Co.'s Allen-Kemp 1, blk 29, W. V. F. L. sur, 150 ft to N and E lines; S. B. Burnett 27, sec 1, T&NO Ry sur, 300 ft W No. 21. Pois & Britain's Kemp & Allen 7, sec 9, W. V. F. L. sur, 150 ft to S and E lines. J. L. Elliott's J. C. Jennings 3, sec 8, HT&B Ry sur, 450 ft S No. 2. Clopton et al's A. L. Harris 1, blk 93, Club ranch sur, 150 ft to S and W lines. G. W. Cooper's G. T. Smith 2, blk 16, Cowherd Bros. sur, 300 ft S No. 1. Camp Oil & Gas Co.'s L. P. Douglas 13-B, sec 11, HT&B Ry sur, 300 ft E No. 1. Roberts & Hill's W. W. Overby 11, H. B. Balch sur, 900 ft E No. 1.

Webb County—D. J. Oil Co.'s Callahan Land Co. 1, sec 160, H&GN Ry sur, 750 ft to E and 1800 ft to S line.

Wilbarger County—Petroleum Prod. Co.'s S. A. Dill 2, sec 84, H&TC Ry sur, 150 ft to S & W lines. J. B. Levy's Wheeler 1, sec 56, H&TC Ry sur, 150 ft to S and W lines; Waggoner 1, sec 65, H&TC Ry sur, 250 ft to N and E lines. F. E. Skinner's F. Street 1, sec 7, H&TC Ry sur, 660 ft to N and W lines. Barkley & Meadows' Carter 1, sec 83, H&TC Ry sur, 150 ft to N and E lines. Staley &

Weekly Comparison of New Wells

Following is a condensed table giving a comparison of permits or locations made for new wells in Kansas, Oklahoma, Arkansas, Louisiana, Texas and California.

Number of New Wells for Week Ending

	July 1	Aug. 8	Aug. 15	Aug. 22	Aug. 29	Sept. 5	Sept. 12	Sept. 19	Sept. 26	Oct. 3	Oct. 10	Oct. 17	Oct. 24	Nov. 1	Nov. 8
Kansas	..	9	12	16	10	19	6	14	23	21	25	16	12	30	38
Oklahoma . . .	62	60	53	80	68	51	73	63	60	66	43	32	47	53	77
Arkansas . . .	..	13	8	11	2	19	13	13	12	7	7	16	14	12	9
Louisiana . . .	10	3	4	8	7	9	9	12	14	5	10	9	5	19	11
Texas	103	102	75	89	82	85	130	78	110	96	86	107	129	103	111
California . . .	22	24	22	25	16	18	..	14	19	21	18	22	17	20	23
Totals	197	211	174	229	185	201	231	194	238	216	189	202	224	237	269

Wynne's W. T. Waggoner 1, sec 109, H&TC Ry sur, 150 ft to S and E lines.

Wharton County—Union Sulphur Co.'s Dunn & Moore 1, S. F. Austin sur, 415 ft to E and 625 ft to S line.

Young County—C. P. Bruton's H. Lewis 1, 187 TE&L sur, 150 ft to S and E lines.

LOUISIANA

Caddo Parish — William Gross et al's Rives et al 1, 5-20n-16w, 1000 ft E and 250 ft N of SW cor. NW¼ of NE¼. Gulf Refining Co. of La.'s Ferry Lake 219, 22-20n-16w, 850 ft E and 900 ft S of NW Cor. of Sec. Fortuna Oil Co.'s Thigpen 13, 5-20n-16w, 680 ft S and 30 ft E of NW Cor. of SE¼.

De Soto Parish—A. H. Tarver's Palmer 1, 3-11n-14w, 200 ft S and 330 ft E of NW Cor. NE¼ of SE¼.

Ouachita Parish—Palmer Corp.'s Morgan 2, 21-19n-5e, 594 ft E and 701 ft S of NW Cor. of NE¼.

St. Mary Parish—Jacob Dannenbaum's La Blanc 1, 21-13s-9e, 15 ft S 1, 46 degrees 30 ft W of S Cor of Sec. 44, thence S 8 degrees 30 ft E 23 ft., thence S 46 degrees 30 ft W. 900 ft., thence S 34 degrees E 142.7 ft to point in Sec. 21.

Webster Parish—Humble Oil & Ref. Co.'s Bodcau Lbr. Co. B-5, 13-21n-10w, 1150 ft N and 330 ft W of SE Cor of Sec; Gray 1, 26-21n-10w, 2310 ft E and 330 ft S of NW Cor. of Sec. The Ohio Oil Co.'s Bodcaw Lbr. Co. Acct. 2 Well 9, 15-21n-10w, 330 ft N and 330 ft E of SW Cor. SE¼ of NE¼; Bodcaw Lbr. Co. Acct 2, Well 10, 15-21n-10w, 330 ft S and 330 ft E of NW Cor. of NE¼ of SE¼. Woodley Pet. Co.'s Fullilove 1, 19-21n-9w, 330 ft N and 330 ft E of SW Cor. NW¼ of SW¼.

ARKANSAS

Columbia County — Morgan & Gaughan's Morgan 1, 3-15-19, 330 ft N and E of SWc of Section.

Ouachita County—Magnolia Pet. Co.'s Patton 4, 32-15-16, 990 ft S and 810 ft W of Center of Sec. Meeks Trust's Laney 2, 30-15-15, 330 ft S and W of NEc SE¼ SW¼. Reynolds & Thompson's Graves 1, 16-14-18, 150 ft N and 660 ft E of SWc NW¼ SE¼.

Union County—Estes et al's Freeman 4, 1-16-17, 200 ft N and W of SEc NE¼ SW¼. Gulf Ref. Co.'s Warner 23, 6-16-16, 150 ft S and 2440 ft W of NEc of Sec. Johnston Trust's Ford 1, 17-17-15, 200 ft N and E of SWc of Sec. O'Brien et al's Fee C-1, 13-19-17, 330 ft N and E of SWc NE¼ NE¼. Wilson et al's Hayes 1, 4-16-15, 660 ft N and 400 ft W of SEc NE¼ NE¼.

CALIFORNIA

Dominguez Field—Shell Co.'s Reyes 20, 34-3-13.

Elk Hills Field—Standard Oil Co.'s Kern County 20, 31-30-25.

Huntington Beach Field—Petroleum Midway Co. Ltd.'s Brown 5, 11-6-11. Southern California Drilling Co.'s Riggle 2, 2-6-11. Columbia Leasing & Dev. Co.'s No. 1, 2-6-11.

Kern River Field—Marland Oil Co.'s Cauley 2, 16-28-27.

Midway Field—North American Con.'s 14, 30-31-24; No. 15, 30-31-24. Marley & McGinn's No. 10, 15-31-22. Pacific Oil Co.'s No. 32, 31-31-24. Surprise Oil Co.'s No. 10, 36-32-23.

Newport Field—Newport Pet. Corp.'s Tunnel 1, 27-6-10.

Rosecrans Field—Barnsdall Oil Co.'s Rosecans 3, 20-3-13.

San Luis Obispo County—E. T. Edward's No. 4, 22-31-21.

Sunset Field—Obispo Oil Co.'s No. 9, 32-12-23.

Torrance Field — Standard Oil Co.'s Marble Fee 28, 15-4-14; Marble Fee 29, 15-4-14. Consolidated Mutual Oil Co.'s No. 1 Oakley 60, 30-4-14. Standard Oil Co.'s No. 4 Kettler, 24-4-14. Shell Co.'s No. 2, 9-4-14. Standard Oil Co.'s No. 19 Joughin, 25-4-14; No. 20 Joughin, 25-4-14. Petroleum Midway Co. Ltd.'s No. 4 Carlson, 14-4-14.

OKLAHOMA

Carter County—Winkler's Reynolds 1, NWc SE 22-1s-3w. Magnolia Pet. Co.'s Johnson 2, C NW SE NE 32-1s-3w. Tidal Oil Co.'s Choate 4, C NW NE NE 36-2s-2w. Magnolia Pet. Co.'s Bennett 12, NW¼ 31-2s-2w; No. 13, same farm, C NW SW NW 31-2s-2w. Shermerhorn's Palmer 6-B, SW¼ 32-2s-2w. Amerada Pet. Co.'s Cassidy 1, C N½ NE 33-5s-1e.

Creek County—C. G. Tibbens' No. 2, SWc NW NW 18-14-9. Twin State Oil Co.'s Brady 1, C SW SW NW 34-16-9. L. B. Pratt et al's No. 1, Lot 7, Block 14, townsite of Mounds, SW¼ 8-16-12. Suppes et al's No. 1, 1100 ft from S line and 1300 feet from W line of SW¼ 8-16-12, Mounds district; No. 2, same district, 1300 ft from S line and 1300 ft from W line of SW¼ 8-16-12. Texas Co.'s No. 1, SWc NW SW 8-16-12, (on an 18 acre lease) Wilcox Oil & Gas Co.'s No. 1, Lot 1, Block 30, townsite of Mounds, 8-16-12. Vick Oil Co.'s No. 1, Lot 1, Block 19, 8-16-12, townsite of Mounds. Woodberry et al's No. 1, Lot 3, Block 19, townsite of Mounds, 8-16-12; Roland Oil Co., No. 2, Harrison, NWc NE NE 25-17-8.

Grady County—Cotton Patch Oil Co.'s Moore 1, NEc SW NW 14-5n-8w. Skelly Oil Co.'s Edmonson 1, C SE NE NW 23-5n-8w. Haggerling's No. 1 McCoughtry, C NE NE NW 35-5n-8w. Powell Briscoe's Reed 2, C W L NW SW 25-5n-8w.

Hughes County—Cosden Oil & Gas Co.'s Alexander 3, C NE NE NW 3-9-9. Skelly Oil Co. et al's Carter 2, C NE SW NE 4-9-9. Transcontinental Oil Co.'s Tiger 6, C NE SE NE 4-9-9; No. 7, same farm, C NW NE NE 4-9-9. Magnolia Pet. Co.'s Brown 3, C NE NW SE 18-9-9.

Jefferson County—Empire Gas & Fuel Co.'s Seay 1, NEc SE SE 33-6s-5w. Heydrick's Grayson 1, NEc SE 18-6s-5w.

Kay County — Wentz Oil Corp.'s McKee 50, NEc NW SE SW 34-25-1w. Texas Co.'s Day 1, NEc 20-29-1w.

Lincoln County—Magnolia Pet. Co.'s Maness 1, C SE SW NE 27-15-5.

Okfuskee County — North Baltimore Oil &

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Gas Co.'s Taylor 1, NEc NW NW 14-11-11. Atlantic Oil Producing Co.'s Fisher 2, NWc SW SE 36-12-10.

Okmulgee County—Eureka Oil Co.'s Rentie 10, SWc 31-12-12. Mee et al's Rentie 4, SEc NE NW 31-12-12. Pulaski Oil Co.'s Bruner 7, SWc 36-12-13. E. R. Black's Sands 1, NEc SW SE 28-13-11. W. R. Sommerville's Ashley 3, C E L NE NW 28-14-14. Sheridan Oil Co.'s No. 2, SWc NE NW SW 3-15-11. Olena Pet. Co.'s Cover 1, SEc NE SW SE 11-15-12. Clure & Dickerson's No. 2, NWc SW SE 33-15-14.

Osage County—Titus et al's No. 1, NWc SE 25-21-10. Owen Osage's No. 306, C N L S½ SE 5-23-11. Marland Oil Co.'s No. 4, NEc NW NE SW 15-24-8. Barnsdall Co.'s No. 17-A, SWc NW NW 12-24-10. Atlantic Oil Producing Co.'s No. 6, SEc NE SW SW 27-5-8. E. B. Lawson's No. 11, NWc SW NW NW 28-25-8. Owen Osage Gas Co.'s No. 302, SEc SW SE SW 10-27-11. Selby Oil & Gas Co.'s Harris 1, NEc NW NW 19-22-11. Mid-Kansas Oil & Gas Co.'s No. 8, C NW SE NW 26-27-5. Phillips Pet. Co.'s No. 10, C SE NW NE 18-27-6; No. 13, same lease, C NW NW NE 18-27-6; No. 14, same lease, C NE NW NE 18-27-6. Texas Co.'s No. 8, C NE SE NW 18-27-6; No. 9, same lease, C SE NE NW 18-27-6; No. 10, same lease, NEc NW 18-27-6.

Noble County—Comar Oil Co.'s Carmichael 19w, C NW SE NE 3-24-1w.

Stephens County — Lone Star Gas Co.'s Brooke 4, SEc SW SW 19-1s-8w.

Seminole County—Magnolia Pet. Co.'s Josua 2, SWc SE SW SW 29-8-8; Frantz 3, C SE SW SW 32-8-8; No. 4 same lease, NWc NE SW SW 32-8-8. Ramsey's Cunsah 3, C NE NW NE 36-8-7. Cosden's Jackson 3, SEc NE SW 4-10-8; No. 4, same farm, NEc SE NE SW 4-10-8; No. 5, same farm, C NE NE SW 4-10-8; No. 7, same farm, C NE NW SW 4-10-8; No. 6, same farm, C NW NE SW 4-10-8. Sinclair's Fixico 1, C SE NE SE 5-10-8. White Eagle Oil & Ref. Co.'s King 1, C SW NE SW 14-10-8. Carter Oil Co.'s Roberts 4, C SE SW NW 16-10-8. Cosden's Bunner 2, C SE NE NE 17-10-8.

Tillman County — Overly, Krohn & Kirk's Duncan 4, SWc NE 17-2s-18w.

Tulsa County—W. E. Hammond's No. 1, SWc SE 19-17-13. Thompson & Black's No. 3, SEc NW NE 2-18-13.

Wagoner County—Knox et al's No. 3, SEc SW NW 17-17-16. Sewell et al's No. 1-A, SWc SE NW 17-17-16. Carter et al's McKellop 1, SWc SE NE 25-18-15.

KANSAS

Chautauqua County—Buck et al's Halroyo 1, SWc NE 3-35-8e.

Cowley County—Mississippi Valley Oil Co.'s No. 1 McKnab, NEc SE 35-31-4e. Marland Ref. Co.'s No. 1 Eddie, NWc SE NE 21-31-6e. J. A. Hull's No. 9 Wallace, NWc SE 24-32-4e; No. 5 Ditmer, NEc SW 24-32-4e. Waite Phillips' No. 2 Alexander, SWc SE SE 4-33-3; No. 2 Johnson, NWc NE SE 9-33-3; No. 1 Thurlow, SEc SW 17-33-3; No. 1 Patterson, SEc NE 18-33-3. Waite Phillips and Marland's No. 5 Glasgow, SEc SW 20-33-3; No. 7 Wertman, NWc NE 20-33-3; No. 8, Wertman, NEc NW 20-33-3; No. 4 Johnson, NWc SW SE 20-33-3; No. 5 Johnson, SW SE 20-33-3; No. 1 Snyder, SWc 21-33-3; No. 1 Beatty, NWc NE 29-33-3. T. B. Slick & Marland's No. 1 Hesket, SEc NW 19-33-3. Waite Phillips' No. 2 Backus, NEc SW NW 20-33-3.

Elk County—Ritchey & Moore's No. 1 Hyde, NEc SW SW 17-30-9.

Greenwood County—Theta Oil Co.'s No. 1 Pixlee, SWc SE 8-22-10. O. J. Connell et al's No. 1 Snowden, SEc NE NE 12-22-10. Tidal Oil Co.'s No. 3 South, C SE NE SW 22-22-11. Fisher-Lauch & Moore's No. 1 Richards, NWc NE SE 22-22-11. Polhamus et al's No. 13 Marshall, C N L NW SW 34-24-10e. Chas. Christy's No. 1 Kingsworth, SWc 30-24-13e.

Lyon County—Southwestern Pet. Co.'s No. 1 Haughton, NEc SE 20-21-12.

Montgomery County—Smith & Thomas' No. 1 Kick, NWc 3-33-14e. Sturnburg et al's No. 1 Budke, NEc SE SE 11-33-16. Wilkins et al's No. 1 Zutz, NEc SE SE 11-33-16. Reed & King's No. 1 Remington, NWc SW NE 13-33-15. Thayer et al's No. 1 Gergen, SWc SE NE 16-33-17. Orlando Oil Co.'s No. 1 Taylor, NWc SE NE 6-35-15. Overfield & French's No. 1, Fairbond, NWc SE SE 1-35-16.

Neosho County—Shaffer Oil & Ref. Co.'s No. 1 Haynes, NEc SE 9-27-18. Burton & Aken's No. 1 McMullen, NWc SE 35-29-19.

Sumner County—Waite Phillips' No. 1 Harkins, SWc NE 9-32-1e.

Wilson County—Bryan & Stinson's No. 1 Edwards, SWc NE 22-30-15. West & William's No. 1 Smilley, C NE NE 29-30-7e.

Rebuilding Tanks

Los Angeles, Calif., Nov. 8.—The Standard Oil Company of California has about 100 men at work erecting four 80,000-barrel steel tanks at its tank farm just west of its Kern River refinery. Old tanks are being razed and rebuilt. The reconstruction will be completed by the end of the year.

General Charters Largest Tanker

Los Angeles, Calif., Nov. 8.—One of the largest motor tankers in the world was launched in Holland last month and is expected at Los Angeles Harbor late in November, under charter to the General Petroleum Corporation for a period of ten years. The tanker is 12,750 tons deadweight, length 470 feet, beam 60 feet and depth 39 feet. It is propelled by twin screws, Deisel driven, and will have a speed of 11 knots. A second tanker of similar design will arrive here in a few months for the same concern, the vessels to be used in the foreign trade.

L. H. McBee, oil field scout for the Sun Oil Company, has been transferred to San Angelo to report on developments in the new Reagan County field and other West Texas operations.

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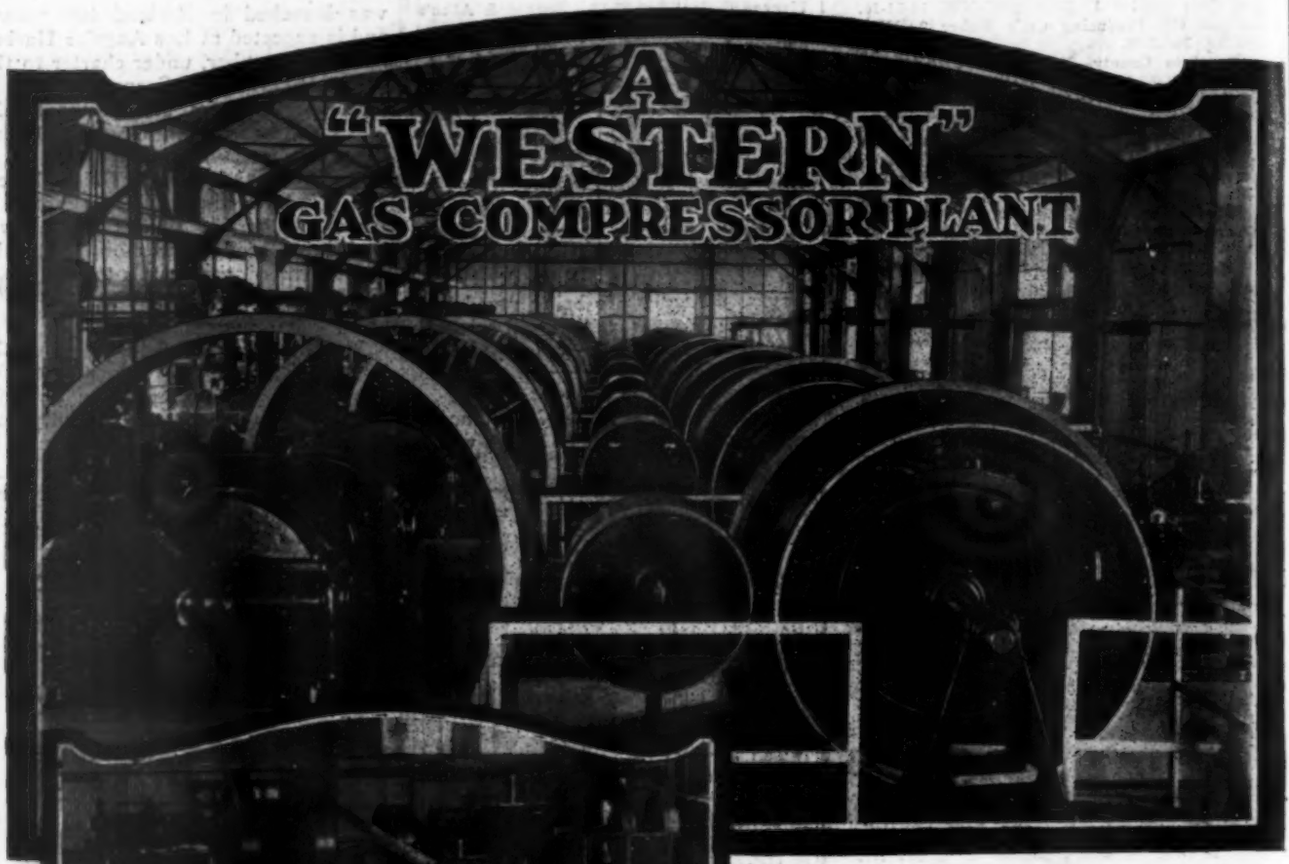
MECHANICAL RUBBER GOODS H. & A. BULL ROPES

BRODERICK & BASCOM WIRE ROPE

BOILER REPRESENTATIVES

Los Angeles, Calif.—Hillman-Cooney, Inc., 1118 Santa Fe Avenue.
Casper, Wyoming—Northwestern Supply Company.
Beaumont, Texas—Brooks Supply Company.
El Dorado, Kansas—Oil Field Specialties Supply Company.
Fort Worth, Texas—Longhart Supply Company, 608 1st National Bank Bldg.
Louisiana, Arkansas, and Houston, Texas—Petroleum Supply Company.



One OF Three
Owned by One Company

All powered with "Western" 160 H.P. Duplex Gas Engines with close coupled belt drives over "Western" Type "S" Idlers.

Our first order from this company was for one "Western" 60 H. P. Duplex Engine several years ago. Now they are operating 4,260 horsepower of "Western" Gas Engines.

A Single "Western" Engine Frequently Has Changed The Complete Power Policy Of An Entire Company

Western Machinery Company

General Offices & Factory: 905 North Main Street,
Los Angeles, California.

Tulsa Oklahoma | Okmulgee Oklahoma | San Francisco California | Bakersfield California

THE POWER BACK OF THE PETROLEUM INDUSTRY

WILDCATS FROM ALL SECTIONS

Central West Texas Wildcats

COMPLETIONS

Company, Well and Location	Initial Production Bbls.	Depth
Brown County—		
Chas. S. Avery et al Cox 3	20	2540
Mendenhall et al Newton 2	15	1251
Callahan County—		
Chas. Dutton et al Carter 1	30	1783
Cathey 6	45	1795
Palo Pinto County—		
Broderick & Calvert's H. L. Mosely 1	*	4100
Reeves County—		
Bell-Reeves Oil Co. Findley et al 1.	*	1535
W. S. Troy et al H. G. Hersheusen 1	*	415
El Paso-Saragosa Oil Co. Geo. Wirt 1	*	536
Pico Pet. Co.'s Johnson 1	*	1930
Texas Drlg. Co.'s Pecos Valley 1..	*	1105
Willoughby Pet. Co.'s W. D. Cowan 1	*	700
Rodenbaugh & O'Connell's W. D. Casey 1	*	845

DRILLING REPORT

BROWN COUNTY—M. T. Anderson-Moore et al's Wheeler 1, testing oil and gas pay 2695 ft. Gully & Griffin's Cox 1, dr 2010 ft. Honea et al's E. DeBusk 2, dr 2220 ft. Moore & Wilson's Williams 1, dr 600 ft. C. O. Moore et al's Teston 1-DD, sd 1100 ft. McMurray et al's Newton 2, machine. New Era Oil Co.'s Prather 3, spudding. Omaha Southern Oil Co.'s G. B. Gaines 2, sd 1840 ft. Stone & Co.'s Gunn 1, dr 1200 ft. T. B. Slick et al's Chambers 1, dr 1350 ft. Thomas et al's Bohara 1, sd repairs 2410 ft.

CALLAHAN COUNTY—Blair et al's Cathey 5, sd 1785 ft. Byron-Union Oil Co.'s Hennessey 1-DD, dr 4210 ft. Chas. Dutton et al's Harwell 1, sd 800 ft; Cathey 5, timbers; Cathey 7, rig. Dudley Oil & Gas Co.'s Hugh Moore 1, sd 1853 ft. Hickey et al's E. L. Findley 2-A, rig. Junior Oil Co.'s A. L. Huntington 1, sd 2280 ft. Kellogg Drilling Co.'s Snyder 1, sd 2400 ft. McMath et al's Isenhower 1, spd and sd. Pope-Wilson & Pennant Oil & Gas Co.'s W. B. Bryson 4, fsh bailer 2050 ft. Prewitt et al's Bailey 1, sd 1945 ft; Betcher 1, sd 2635 ft; W. W. Crane 1, dr 1110 ft; Geo. T. Crane 1, dr 1010 ft; Crane 2, spd; White 1, ur 1805 ft; Windham 1, sd 1445 ft.

COLEMAN COUNTY—Archie Shaw et al's J. R. Adams 1, (A. Wickson sur) lcn.

JOHNSON COUNTY—Culberson, Wyley & Dunlap's A. B. Pullen 1, (T. S. Roberts sur) dr 300 ft.

PALO PINTO COUNTY—Cameron & Anderson's W. O. Pollard 2, spd and sd. J. D. Cranford et al's Smith 1, spd and sd. Hall et al's Chenault 1, dr 715 ft. Hughes et al's Belding 1, fsh 1335 ft; Weldon 2, dr 1210 ft. McKinney et al's Marsden 1, sd 465 ft. S. W. Manning et al's R. Hitson 1, sd 3640 ft. Phillips et al's Stringer 1, dr 960 ft. Phillips & Graham's J. A. Caudill 1, sd 3800 ft. Pender Production Co.'s Slemmons 2, dr 2440 ft. B. H. Talbert et al's Slimp 1, sd 1105 ft. Wickens et al's Williams 1, spd and sd.

PARKER COUNTY—Chas Woolridge et al's B. C. Evans 1, (2 miles south of Whit) rig.

SOMERVELL COUNTY—Glenrose Oil & Gas Co. et al's J. R. Buzan 1, (4½ miles SW of Glenrose) dr 2660 ft.

BREWSTER COUNTY—Tesnus Oil Corp.'s A. S. Cage 1, sd 2555 ft. Brewster Oil Co.'s W. H. Kokernot 1, sd 2535 ft. Portland Oil & Gas Co.'s State 1, sd 3050 ft. Nine Points Oil & Gas Co.'s Peralto & Finnell 1, sd 3060 ft. Green Valley Oil Co.'s J. P. Wilson 1, sd 1601 ft.

COKE COUNTY—John Sward & Laller's J. R. Mims 1, lcn. Mexia-Equitable Oil Co.'s W. H. J. Hodges 1, sd 2500 ft.

CONCHO COUNTY — Dome Production Co.'s Mrs. C. M. Hartgrove 1, sd 1430 ft; Hartgrove 2, machine. Schultz Oil Co.'s W. O. Schultz 1, sd 3225 ft.

CRANE COUNTY — Texas Development Co.'s Jax Cowden 1, dr 2555 ft; Jax Cowden 2, dr 1140 ft.

CROCKETT COUNTY — Crockett Drilling Synd.'s Robt. Massey 1, sd indefinitely 1755 ft. World Co.'s L. P. Powell 1, sd 1000 ft. Seaboard Oil & Gas Co.'s University 1, lcn.

CULBERSON COUNTY— David Flood et al's McAlpine & Grisham 2, lcn. J. D. Wesner et al's Mack Sayles 1, sd 3105 ft.

DAWSON COUNTY — Lamesa Oil Co.'s John Burns 1, sd 2150 ft.

ECTOR COUNTY—Farmers Oil Co.'s Andy Newham 1, sd 1400 ft.

FISHER COUNTY—Pyron Oil Co.'s J. S. McCall 1, sd 3120 ft.

GARZA COUNTY—B. V. Blackwell et al's J. M. Boren 1, (Sec. 136, Blk. 5, H&GN Ry Sur) sd to shoot show oil 2415-40 ft. Mitchell-McDaniel & Jewell's Clyde Connell 1, sd for cas 750 ft.

GLASSCOCK COUNTY — Gulf Production Co.'s L. S. McDowell 1-C, co with 1500 ft water and some oil in hole after shot 250 quarts at 2535-2625 ft. Cushing Ranch Drilling Assn.'s W. H. Sparkman 1, sd 1950 ft. Ledger Oil Co.'s C. I. Brunson 1, setting cas 1710 ft.

HUDSPETH COUNTY— Boole Oil Assn.'s Gardner et al 1, sd 1540 ft. Hueco Basin Oil Co.'s University 1, sd 2560 ft. Wm. Loftus et al's C. I. Brunson 1, dr 1590 ft.

HOWARD COUNTY—Big Springs Oil Co.'s Mable O. Quinn 1, sd 3640 ft.

IRION COUNTY—Orient Oil Co.'s J. D. Sugg 1, (Sec. 27, Blk. 2, H&TC sur) dr 1265 ft. Virginia-Texas Petroleum Co.'s Tom Green School Land (S of Orient RR) 1, rigging up.

JONES COUNTY—Anson Oil & Dev. Co.'s C. B. Brown 1, sd 1855 ft. C-H Oil & Dev. Co.'s J. A. Cullom 1, sd 3500 ft.

KARNES COUNTY—Alidor Oil Co.'s A. W. Hyatt 1, sd with good show gas 1156 ft.

LOVING COUNTY—J. J. Wheat et al's N. E. Chapman 1, dr 715 ft. Ramsey Production Co.'s Russell 1, sd 4485 ft; Russell 2, sd 810 ft.

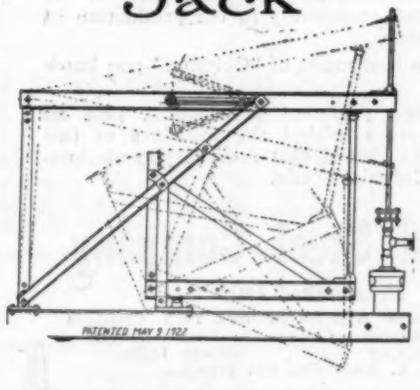
MITCHELL COUNTY — The California Co.'s Clark 1, casing trouble 1540 ft; H. C. Miller 5, dr 1815 ft; W. H. Abrams (T&P) 7, dr 2375 ft. M. E. Eddleman et al's A. C. Gist 1, dr by tools 2850 ft. Sloan Oil Co.'s H. C. Miller 2, sd indefinitely 1265 ft; Miller 3, dr 125 ft. Chal. Daniel et al's W. D. Kynard et al's, rig. Morrison-Rowe-Lease Synd.'s W. D. Kynard 1, showing oil 2910 ft. I. B. Humphreys et al's P. C. Coleman 1, co with small show oil after shot 3115-70 ft. J. P. Harris et al's W. C. Brown 1, sd 370 ft; Brown 2, sd 205 ft.

PECOS COUNTY—Arkansas Fuel Oil Co.'s Blackstone & Slaughter 1, (Sec. 11, Blk. "T") spd and sd. Trans-Pecos Oil Co.'s H. L. Thomas 1, fsh cas and tools 1830 ft; W. W. Turney 1, sd 2900 ft; Bennett et al 1, sd 1240 ft; Johnson-Troy 1, sd 2965 ft. Southern States Lease & Prod. Co.'s J. M. Odem 1, sd 1205 ft. Transcontinental Oil Co.'s Sheribino 1, dr 320 ft.

PRESIDIO COUNTY—Tesnus Oil Corp.'s (was Claude Byler) Toole Estate 1, sd 965 ft.

REAGAN COUNTY — Arkansas Fuel Oil Co.'s University 1, (Sec. 9, Blk. 6) dr 2660 ft. Big Lake Oil Co.'s University 13, (Sec. 12, Blk. 2) dr 2530 ft; University 14, (Sec. 1, Blk. 2) dr 2070 ft; University 15, (Sec. 12, Blk. 2) dr with rotary 2342 ft. Brandon-McCamey et al's University 1, (Sec. 27, Blk. 2) rigging up. B. H. Cogdell et al's University 1, (Sec. 23, Blk. 8) rig. Crockett Drilling Synd. et al's University 1, (Sec. 9, Blk. 9) dr 2570 ft. The California Co.'s University 1, (Sec. 13, Blk. 8) dr 250 ft. H. S. Grayson et al's University 1, (Sec. 28, Blk. 8) materials. J. K. Hughes Development Co.'s University 1, (Sec. 5, Blk. 9) combination rig. P. H. Hoffman et al's University 1, (Sec. 23, Blk. 11) rig. Mid-Kansas & Transcontinental's Mason & Hughes 1, (Sec. 1225, E. L. & RR sur) rig. Simms Oil Co.'s Sawyer Cattle Co. 1, (Sec. 12, S. A. Glass sur) rigging up. Texon Oil & Land Co.'s University 1, Group 2, (Sec. 22, Blk. 9) pulling 5 3-16-inch cas 3565 ft; University 2, Group 1, (Sec. 36, Blk. 9) dr 1140 ft; University 3, Group 1, (Sec. 36, Blk 9) spudding; University 4, Group 1, (Sec. 1, Blk 8) lcn. Transcontinental Oil Co.'s University 1, (Sec. 10, Blk.) dr 1100 ft. University Oil Co.'s University 1, (Sec. 17, Blk 10) set 15½-inch cas 490 ft, dr 700 ft. C. J. Wrightsman et al's

The Jensen Straight Lift Jack



The Polished Rod *can't* Bend

The Jensen Jack lifts it *Straight up,* and lowers it *straight down*

without any strain or excessive wear on the Rod, or on the Stuffing Box Rings, or on anything else.

The Straight Lift makes a five-foot stroke practical. Made in No. 2 and No. 3 sizes.

Jensen Bros. Mfg. Co.
Nowata, Oklahoma

RESULTS

are sure to be satisfactory if you use the HOUGH PLUNGER WORKING BARREL.

Ask your dealer to show you one.

The Charles N. Hough Manufacturing Co.

FRANKLIN, PENNA.

Products that cut down your underground overhead.

Colonial

WELL BIT & JAR STEEL

Here IS Service

PRODUCED in the heart of the nation's steel making industry, the home of more expert steel makers than all the rest of the country combined, there is exceptional service in Colonial Well Bit and Jar Steel.

Backd by the more than 20 years' experience of the Colonial Mill devoted exclusively to the production of high grade Tool Steels.

When you have a tool made of "Colonial" you know that it is good.

Twenty continuous years of satisfaction, plus an equal number of years behind the founders of this company—this is the record that assures you of satisfactory service in Colonial Steels.

Colonial Steel Company

Established 1901

Pittsburgh Boston New Haven New York Cleveland
Cincinnati Dertoit Chicago St. Louis Denver
Salt Lake City Wallace, Idaho
Edw. L. Soule' Co., San Francisco

Ingham 1, (Sec. 39, Blk. "C", L. & S. V. Ry sur) sd for 15⅝-inch cas 305 ft.

REEVES COUNTY — Dixieland Oil Co.'s Oates 2, sd 4505 ft. Dome Drilling Synd.'s Ira J. Bell 1, sd for standard rig 585 ft.

RUNNELS COUNTY — Subscribers Assn.'s R. R. Russell-Giesezke 1, showed two million dry gas at 2560 ft, sd 2732 ft.

SCURRY COUNTY—Camp Springs Oil & Ref. Co.'s W. Y. Jones 1, sd 600 ft; J. O. Quinn 1, sd 3570 ft; L. E. Howell 1, lcn. Hermleigh Oil & Gas Co.'s J. W. Burris 1, sd 2965 ft. Stanton Oil & Gas Co.'s J. W. Riley 1, sd 2500 ft.

STERLING COUNTY — Ford & Cogdell's W. L. Foster 1, dr 200 ft. Chicago-Texas Oil & Gas Synd.'s D. C. Durham 1, co 1427 ft; Durham 2, (Sec. 8, Blk. 12, S. P. Ry sur) showing for small pumper with no water in sandy lime pay 1401-06 ft. Co-Operative Lease & Development Co.'s Douthitt 1, dr by drill stem 1825 ft. Fidelity Oil Co.'s G. R. Hull 1, setting 10-inch cas 1708 ft.

STONEWALL COUNTY—Elder Nance et al's Ward Estate 1, dr with rotary 2795 ft.

TAYLOR COUNTY — Sanger Oil & Ref. Co.'s McClure 1, lcn; S. P. Hollingshead 1, dr 215 ft; Tom Sawyer 1, sd 2700 ft.

TERRELL COUNTY—R. E. Dunn et al's Fee 1, star machine. Southwest Texas Oil & Gas Co.'s S. W. T. No. 1, sd 3515 ft.

UPTON COUNTY—W. P. Morris et al's H. M. Halff 1, spd and sd. Regan & Bell et al's University 1, (Sec. 2, Blk. 4) rigging up. Suggs & Chancellor et al's University 1, (Sec. 8, Blk. 4) lcn. Virginia-Texas Pet. Co.'s University 1, (Sec. 14, Blk. 15) rigging up.

VAL VERDE COUNTY—East Del Rio Oil Co.'s Russell & Weathersbee 1, sd 2605 ft. Independent Operator's Whitehead 1, sd 2155 ft. Joe W. Morris et al's Moore Estate 1, sd with show gas 2280 ft. Reclamation Oil Prod. Synd.'s J. B. Moore 1, sd 2575 ft. Hodges & Wright's B. S. Harrison 1, dr 1010 ft.

WARD COUNTY—Cook & O'Brien's G. W. O'Brien 1, sd 1175 ft. Trans-Pecos Oil Co.'s Longnecker 1, sd 1755 ft.

East Central Texas Wildcats

COMPLETIONS

Company, Well and Location	Initial Production Bbls.	Depth
Bowie County—		
E. B. Guest et al's A. Hooks 1, (John Barkman sur)	*	2112
Franklin County—		
J. C. McNeill et al's J. C. Harper 1, (J. S. Clift sur)	*	3020

DRILLING REPORT

BOWIE COUNTY—Boyd Oil Co.'s C. H. Thompson 1, (Jacob Barkman sur) chalk from 1546 to 2070 ft, tested salt water 2381 ft. Mission Oil Co.'s W. H. Nelson 1-A, (Nancy Dycus sur) dr shale 2430 ft. Geo. B. McCullough et al's W. R. Williams 1, (L. M. Rice sur) spd and sd. Williams et al's Daulby 1, fsh cas 2050 ft.

FALLS COUNTY (Kosse District)—C. W. Harrison et al's J. W. Preston 1, (H. Anderson sur) fsh in chalk 2900 ft.

FANNIN COUNTY—Lester Pet. Co.'s S. D. Graves 1, (Wm. Hutchins sur) passed up gas sand, dr 1729 ft.

FREESTONE COUNTY — Boyd Oil Co.'s Roy Simmons 1, (Wortham district) Austin chalk from 2224 to 2564 ft, sd for core barrel 2900 ft. Carter & Lytle's J. J. Manning 1, (Wortham district) fsh drill stem 1681 ft. John Hooser et al's J. J. Stubbs 1, (Wortham district) dr 1550 ft.

HENDERSON COUNTY—Fred E. Haynes et al's E. G. Bounds 2 (Henry Jeffreys sur) fsh cas 2150 ft.

HOPKINS COUNTY—The Texas Co.'s Jack Wortham 1, (Samuel W. Hough sur) dr red beds 3610 ft. C. A. Kelsey et al's Addie Brooks 1, (D. Dowdle sur) sd 1605 ft. Gulf Production Co.'s W. J. Davis 1, (Jas. Clark sur) lcn. Bar-Tex Drilling Co.'s C. H. McClure 1, (D. Waggoner sur) rig. Stough & Potts et al's J. R. Fitzgerald 1, (John Binnion sur) dr 1465 ft.

HUNT COUNTY—Gulf Production Co.'s C. M. Cannon 1, (Robt. Ragsdale sur) coring

PERFECTION VAPOR PRESSURE TANKS
WOOD, AND BOLTED STEEL TANKS

Every one of our branch offices has an ample supply of Perfection Vapor Pressure Tanks in all the usually required sizes.

More Care in Selecting Lease Tanks

"Tanks are no longer just tanks."

For a wise oil operator picks them with the same care he picks any other equipment on his lease.

His tanks must have quality of course; that is they must be manufactured of the best rust-resisting steel obtainable, have no imperfections and have a generous factor of strength and durability plus.

More recently the same operator insists that his lease tanks be free from the ravages of evaporation; that they have special valves to take care of both pressure and vacuum; and when used as flow tanks, they completely separate the oil from the gas, leaving the latter available for lease fuel or for the gasoline plant.

Every one of these qualities are possessed by the PERFECTION Vapor Pressure Tank. You don't have to look further or experiment with untried propositions.

The best measure of its success is that about every company of importance in the country has made it standard lease equipment.

Let our representative in your district go further into details.

Black Sivalls & Bryson
INC.

BARTLESVILLE ~ OKLAHOMA

Branch offices in all principal active fields

RESULTS

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East Central Texas Wildcats

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Black Sivalls & Bryson
INC.
BARTLESVILLE ~ OKLAHOMA

Branch offices in all principal active fields

Say you saw it in The Oil Weekly

TRADE MARK
KEYSTONE
REGISTERED U. S. PATENT OFFICE

Improved Deep Well Rig

EMBODIES THESE VALUABLE FEATURES

Friction Tool Hoist—Casing Reel—Indestructible Steel Sills—Keystone Patented Spudding Device—V-Friction Brakes, Patented Babbitted Bearings throughout.

This machine is new—modern, complete, the product of an old and established concern. It is backed by 35 years of experience in the manufacture of portable drilling rigs and a world-wide reputation.

We are building three sizes: No. 27, for 2500 feet; No. 32, for 3000 feet; and No. 35, for 3500 feet depth.

Machines can be seen in various parts of the Kansas, Oklahoma and Pennsylvania fields. Let us wire you where to find one. BULLETIN 302 and prices on request.

KEYSTONE DRILLER CO.
BEAVER FALLS, PA.
Branch Office and Plant
Joplin, Mo.

FOR SALE

Eleven De Laval Steam Driven Oil Separators—Type 601.

These machines are in first class condition and have copper lined bowls and copper tinware.

This is a real bargain

Communicate with

Purchasing Department

H. F. Wilcox Oil and Gas Co.

Wilcox Building Phone Osage 8015

Tulsa, Oklahoma

BETTER OIL TOOL SERVICE

For the convenience of the trade in Cowley and Sumner Counties in Kansas, and Kay, Osage and Noble Counties in Oklahoma, as well as other adjacent fields, The Farley Machine Works wishes to announce that it has just completed the installation at

Arkansas City, Kansas

of a fully equipped oil tool shop manned with expert workmen.

The original shop at Peabody, Kansas, of this company which has been serving the trade in Northern Butler, Marion and Northern Kansas and Nebraska will continue as heretofore.

It is our aim to render the same high class service at Arkansas City which has always characterized our work at Peabody.

We carry a full line of Swan underreamers, for sale or rental

THE FARLEY MACHINE WORKS
Jack Farley, Manager

hard sand 2930 ft. Sam Tallal & Kelsey's J. W. Barnett 1 (Alex Smith sur) dk.

KAUFMAN COUNTY—Marland Oil Co.'s G. W. Kelley 1, (Green Lee sur) dr 2320 ft. Judge J. A. Germany et al's W. S. Kirby 1, (S. Edens sur) sd 2896 ft.

LAMAR COUNTY — Interstate Oil Co.'s Ben Haynes 1, (Larkin-Rattan sur) steel dk.

LIMESTONE COUNTY—Boyd Oil Co.'s N. B. Boyd 1, (Wortham district) capped with small flow of gas after drilling cement plug 2960 ft. W. T. Church et al's R. Kennedy 1, (P. Varella sur) gas shut in 2947 ft. Hamil Drilling Co. et al's Roscoe Cook 1, (P. Varella sur) sd 3675 ft. Z. Gardner et al's E. M. Speight 1, (P. Varella sur) dr 3520 ft. Pure Oil Co.'s J. W. Webster 1, (E. W. Jackson sur) top chalk 2398 ft, dr in chalk 2415 ft. Bankers Trust Co.'s McCormick 1, (18 miles NW of Corsicana) testing sand 1829 ft. Sun Oil Co.'s H. A. Swink 1, (M. Boren sur and Richland district) Austin chalk 2553 to 2837 ft, dr sand 2945 ft.

NAVARRO COUNTY—Bankers Trust Co.'s McCormick 1, (18 miles NW of Corsicana) testing dry sand 1829 ft. Gilbert Johnson et al's J. W. Greer 1, (G. Rushian sur) dr 2915 ft. Boyd Oil Co.'s C. R. McCowan 1, (Morris Webb sur) sd 3248 ft. A. G. Ilseng & Alex Patrick's W. L. Roberts 1, (Jos. Mayor sur) sd 1740 ft.

RAINS COUNTY—Mrs. Ferguson & Short Bros.' W. D. Peeples 1, (F. A. Tibbles sur) spd and sd.

ROCKWALL COUNTY—Geo. Rochelle et al's J. S. Shook 1, (S. S. McCurry sur) fsh drill stem at 2100 ft, td 3010 ft.

ROBERTSON COUNTY—J. C. Bland et al's A. W. Wilkerson 1, (F. Ruiz sur) 3 miles east of Hearne, sd 4270 ft.

RED RIVER COUNTY—Johnson Petroleum Co.'s Antone & Worley 1, (Robt. Gamble sur) sd 3275 ft.

TITUS COUNTY—Magnolia Pet. Co.'s Geo. Antone 1, (M. V. Delgado sur) water trouble 1105 ft.

VAN ZANDT COUNTY—Porter-Holmes & Frank Buttram's J. T. Dunbar 1, (Van Sickle sur) dr sandy shale 3290 ft.

WOOD COUNTY—Golden Oil Co.'s J. D. Adrian 1, (Hall mark sur) dr Eagle Ford 3385 ft.

Texas Panhandle Wildcats

COMPLETION

Company, Well and Location	Initial Production Bbls.	Depth
Carson County—		
The Texas Co. Mary C. Burnett 1	100	2965

DRILLING REPORT

CARSON COUNTY — American Ref. Co.'s Burnett 3 rigging up, td 1830 ft. J. Crosbie et al's Burnett 1, dr 1910 ft. Culbertson Bros. et al's V. B. Armstrong 1, moving in cas, td 2950 ft. Danciger Oil & Ref. Co.'s Burnett 1, cem cas 2930 ft. Gates Oil Co.'s Burnett 1, dr 2855 ft. Gulf Production Co.'s Burnett 5, rigging up; Burnett 6 and 7, lcns; Burnett 1-A, wtg on 6-inch cas, td 2960 ft. Marland Oil Co.'s Burnett 1, dr 2860 ft. Olsen Bros. et al's Burnett 1, fsh 2500 ft. Premier Oil Corp.'s Burnett 1, sd 1300 ft. W. W. Silk et al's Burnett 3, second hole, dr 1555 ft. Skelly Oil Co.'s Burnett 2, dr 350 ft. The Texas Co.'s Burnett 4, co 2970 ft; Burnett 5, dk; Mary C. Burnett 2, second hole, dr 1830 ft.

COTTLE COUNTY—T. J. Woodley et al's A. Dulaney 1, dr 2600 ft.

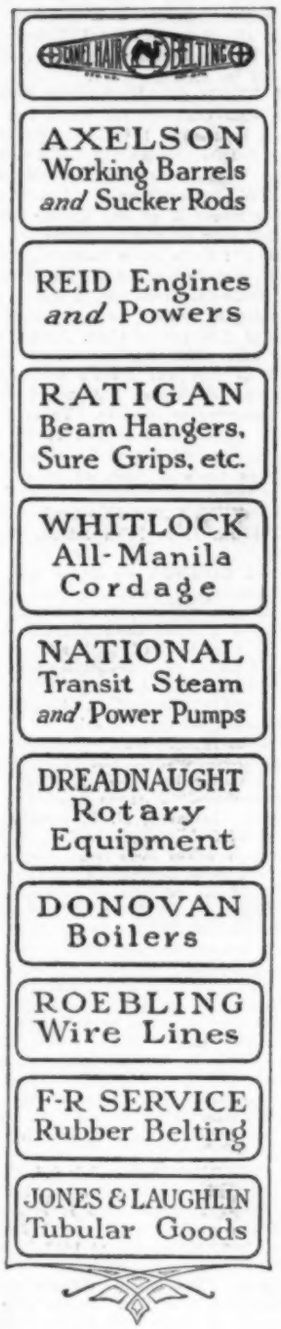
KING COUNTY—W. G. Trammell et al's Spikes 1, rigged up.

MOORE COUNTY—Amarillo Oil Co.'s Masterson 1, second hole, dr 380 ft.

POTTER COUNTY—Amarillo Oil Co.'s W. H. Bush 1, dr 2710 ft; J. C. Warrick 1, dr 1815 ft.

ROBERTS COUNTY — Phil Engle et al's Mrs. Ledrick & Sons 1, sd 1730 ft.

WHEELER COUNTY — Mid-Continent Oil Synd.'s Ember 1, sd 500 ft. W. D. Sheddon et al's B. F. Westmoreland 1, sd 480 ft. Union Petroleum & Supply Co.'s O. T. Nicholson 1, sd 1500 ft. J. Whittington's Williams & Laycock 2, set cas 1350 ft.



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Later on we make more important discoveries. Some of them are happy discoveries and some of them are painful, depending on whether life is cruel or kind. You can think of something important you've discovered about life within the last year. All of us can.

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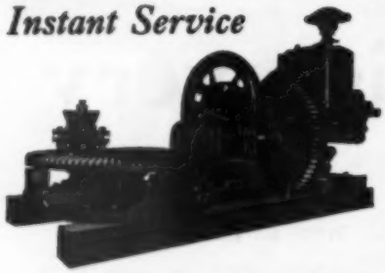

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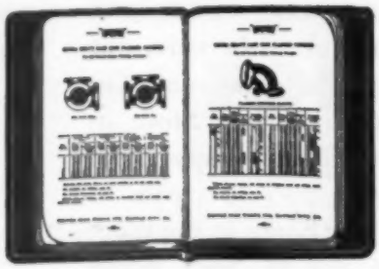

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Coastal Wildcats

BRAZORIA COUNTY—D. F. Bryan Prod. Co. & Hamm et al's Bryan 1, at Freeport, J. G. McNeel sur, dr below 2790 ft in gumbo. Hamm et al's Bryan Estate 1, Damon Homestead, T. H. Bryan Estate, hit 10 ft rich sand below 1400 ft, setting screen.

FORT BEND COUNTY—Gulf Prod. Co.'s Moore 1, near Orchard, 375 Vs N and 325 Vs E of most southernly SW cor of Burknap sur, dr below 300 ft. Neilan Oil Co.'s well, about 5½ miles W of Rosenberg, sec 19, MA&AG Ry sur, NW cor, spudding in. Jas. W. Rich et al's Moore-Hager 2, at Big Creek, 300 ft NE No. 1, SE side of dome, moving dk to lcn. Pathfinder Oil Co.'s Davis Estate 4, Philo-Fairchilds sur, abn below 900 ft; Davis Estate 5, sec 101, Philo-Fairchilds sur, S No. 4, spudded in. Rycade Oil Corp.'s Nash 1, 2600 ft E and 200 ft S of NW cor of Capt. Nash's 200 acre lease, dr below 2000 ft; Nash 2, 400 ft E and 600 ft S of NW cor Nash's 486 acre tract, Alsberry sur, 28 degrees NW and 4650 ft NW No. 1, preparing to spud in. Texas Co.'s Fee 1, at Big Creek, 2100 ft NE of W cor and along NW line and 504 ft SE at right angles from Texas Co.'s N line, dr below 1040 ft in sand.

GALVESTON COUNTY—Gulf Prod. Co.'s Geo. E. Smith 1, at High Island, shut down for water.

HARRIS COUNTY — Dome Dev. & Pet. Co.'s Schneider 1, Schneider farm, John D. Taylor sur, blk 41, sd below 850 ft.

JACKSON COUNTY—Vanderbilt Pet. Co.'s Seliner 1, 4 miles NW of Vanderbilt, C. W. Hall sub-division of Harwood-Burns ranch, dr below 2710 in lime and gumbo. Jackson County Oil Synd.'s Drushell 2, (Wright Bros.) Drushell lease, testing for oil.

JEFFERSON COUNTY—Houston Oil Co.'s Gulf-Pipkin 1, Pipkin & Davis sur, dr below 2988 ft in shale; Sun-Pipkin 1, Pipkin & Davis sur, dr below 2910 ft in hard sandy lime. Paggi Bros.' Miller 1, N. F. Lazerine league, 300 ft W of Public road, 1000 ft N of S line of league, dr below 2040 ft in gumbo & lime. Rycade Oil Corp.'s Gladys City 1, at Spindletop, 55 ft E and 50 ft N of SE cor of blk 47, J. A. Veatch sur, dr below 2775 ft.

LIBERTY COUNTY—Texas Co.'s Ott 1, NE side of Gum Thicket, 2375 ft S and 772 ft W of NE cor of J. C. Ott 345 acre lease, dr below 3123 ft in sand and shale.

MATAGORDA COUNTY—Rycade Oil Corporation's Gray 1, offset to Sisk 1, 150 ft N of N line of Texas Co.'s 20 acre lease, 150 ft W of E line of blk 2, dr below 3640 ft in shale; Hudson 3, 100 ft W and 1200 ft S of NE cor of blk 15, Parker sur, dr below 3000 ft; Sisk 1, at Markham, 150 ft W and 150 ft N of SE cor of blk 2, Texas Co.'s 20 acre lease, dr below 3600 ft.

MILAM COUNTY—Sinclair Oil & Gas Co.'s Smith 1, 12 miles SE of Cameron, 7000 acre blk, Smith-Turney structure, 300 ft N and 300 ft W of NW cor of R. N. Turney 162 acre lease, land of H. F. Smith Jr., td 1400 ft, sd for repairs on boiler.

ORANGE COUNTY — Rycade Oil Corp.'s Cow Bayou A-5, at Cow Bayou, core showing oil, setting cas above 3360 ft; Cow Bayou E-1, at Cow Bayou, dr below 4650 ft; Cow Bayou E-8, at Cow Bayou, dr below 4650 ft; Cow Bayou E-14, at Cow Bayou, dr below 3970 ft.

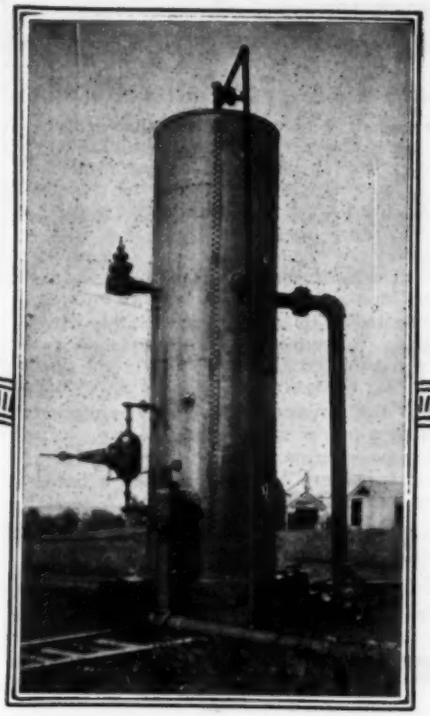
WHARTON COUNTY— Gulf Prod. Co.'s Cloud 1, dr below 175 ft.

North Texas Wildcats

DRILLING REPORT

BAYLOR COUNTY—Batchelor & King's E. S. Wallace 1, sd 100 ft. Crittenden et al's Hawkins 1, dr 1870 ft. Dallas Oil Co.'s Shawver Bros. 1, dr 1850 ft. C. B. Jetter et al's F. Gatzki 1, sd 500 ft. Lehman et al's Shawver Bros. 1, dr 820 ft. D. H. Moore et al's H. H. Fancer 1, sd on sand 970-80 ft, estimated 2 million ft gas. Nelson et al's J. Sykora 1, dr 875 ft. Richardson Bros. et al's Wallace Est. 1, sd 220 ft.

CLAY COUNTY—Atlantic City Prod. Co.'s



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250	"	20"	90	"	"	"
30,000	"	4"	used	line	pipe	
20,000	"	6"	"	"	"	
30,000	"	8"	"	"	"	

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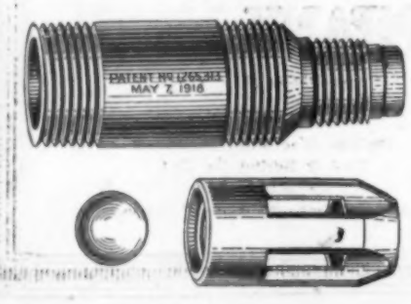

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COOKE COUNTY — Big Indian Oil Co.'s W. B. Davis 1, bailing 3520 ft.

DENTON COUNTY—Arbuckle Asphalt & Pet. Co.'s Kate Fonteberry 1, sd 500 ft.

GARZA COUNTY—B. V. Blackwell et al's J. M. Boren 1, dr 2410 ft, show oil. Union Pet. Corp.'s C. C. Connell 1, sd 750 ft.

GRAYSON COUNTY—W. R. Shankle et al's J. Marshall 1, second hole, sd 1100 ft.

KNOX COUNTY—Brazos Bend Oil Co.'s J. E. Clark 1, sd 2020 ft. Evans et al's Ella Lawson 1, sd 765 ft.

MONTAGUE COUNTY — Boyd Oil Co.'s Mrs. M. H. Salmon 1, sd 902 ft, estimated 75 bbls. Guaranty Fund Oil Co.'s E. A. Jordan 1, DD, dr 3285 ft. Gulf Production Co.'s M. E. Benton 1, (rotary) dr out plug 2675 ft. Mascho Oil Co.'s J. L. Howard 1, sd 3650 ft. Petroleum Producers Co.'s C. H. Howard 1, lcn; N. J. Howard 1, lcn; S. E. Howard 1, lcn. The Texas Co.'s I. A. Gist 2-A, preparing to run cas 915 ft. Texhoma Oil & Ref. Co.'s O. Cato 1, dr 1410 ft. Otic C. Wood et al's Summerour 1, dr 2292 ft.

STONEWALL COUNTY — Elder Nance's Ward Estate 1, dr 1010 ft.

THROCKMORTON COUNTY — Adams et al's Polk Co. School Land 1, sd 1435 ft. Cragin et al's J. R. Burkhalter 1, sd 50 ft. Groves & Burton's Reynolds Cattle Co. 1, sd 672 ft. Hamilton et al's J. T. Odell 1, dr 1330 ft. C. F. Kelsey's W. D. Housley 1, sd 50 ft. King et al's A. P. Broyles 1, sd 740 ft. Bruce Larkin et al's R. E. Conger 1, co 1430 ft; Mrs. T. S. Richards 1, dr 275 ft. Shamrock Oil Co.'s Mrs. A. McKnight 1, dr 2100 ft. The Texas Co.'s A. L. Smythe 1, rigging cable tools. W. A. Whatley et al's Parrott 1, fsh 800 ft.

WILBARGER COUNTY—Barker & Hamilton's A. P. Morris 1, sd 305 ft. Barkley & Meadows' W. H. Stephens 1, rigging up. Bridwell & Heydrick's W. B. Dill 2, dr 660 ft; W. H. Stephens 2, cementing cas on gas sand 1245-60 ft; Stephens 3, rigged up; Stephens 4, rigging up. Bridwell, Heydrick & T. P. Coal Co.'s W. T. Waggoner 1, rigging cable tools. Burton & Ruff's W. T. Waggoner 1, dk. Dill Farm Oil Co.'s W. B. Dill 1, sd 2166 ft. Dumas & Ellis' W. H. Stephens 1, rigging cable tools, td 1360 ft. Hart et al's Smith 1, dr 2000 ft. Humble Oil & Ref. Co.'s R. L. Castlebury 1, rigging up. C. F. Kolp's W. T. Waggoner 1, sd water 850 ft. Ed Mulligan et al's W. T. Waggoner 1, dk. Murchison & Pigg's Davis 1, sd 1025 ft. Mutual Oil Co.'s C. Zipperle 1, rigging up. Noble Oil Co.'s W. T. Waggoner 1, dr 1950 ft. Prince Bros.' C. Zipperle 1, dr 1500 ft. Ray & Massey's W. B. Dill 1, dr 1900 ft; Williams et al 1 dr 1800 ft; Williams et al 2, dr 500 ft. W. J. Sheldon et al's W. J. Sheldon 1, dr 1400 ft. F. S. Skinner's Fred Streit 1, rigging up. South Vernon Oil Co.'s C. W. Richardson 1, r 1330 ft; W. H. Stephens 4, dr 810 ft; W. H. Stephens 5, dr 800 ft. Staley & Wynne's W. T. Waggoner 1, rigging up. Texas Oklahoma Oil & Ref. Co.'s J. Bowers 1, rigging cable tools, td 1000 ft. The Texas Co.'s R. L. Castlebury 1, lease B, lcn. R. M. Waggoner & Winnipeg Oil Co.'s D. Bond et al 1, lcn. Wells & Guiberson's W. T. Waggoner 2, dr 1000 ft. Winnipeg Oil Co.'s D. Bond et al 2, dr 1500 ft; D. Bond et al 3; dr 805 ft.

Kansas Wildcats

BARBER COUNTY—R. B. Brown's No. 1, NWc SW NE 33-30-14w, fsh 3505 ft.

BARTON COUNTY — Cheyenne Oil Co.'s Sooy 1, SWc SW 27-18-12w, sd 3525 ft. Haynes et al's No. 1, NWc 31-12-12w, sd 1640 ft. Mountain States Oil & Gas Co.'s No. 1, SEc NE 22-18-13w, sd 3326 ft. Jasper & Beschka's

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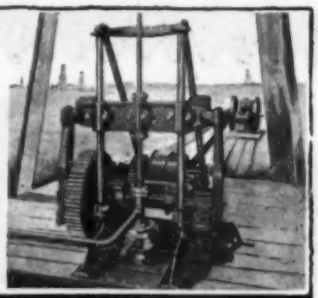

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COFFEE COUNTY — Sunbeam Pet. Co.'s Andrew 1, NWc NE 30-20-15, rig up. Manhattan Oil Co.'s Elliott 1, NWc SW 14-33-13, sd 350 ft. Braden Bros.' Beyer 1, SEc NW 13-22-13, lcn.

CLARK COUNTY—Watcham O. & G. Co.'s Morrison 1, SEc NE NE 2-22-21w, sd 4795 ft.

CLOUD COUNTY—Livingston et al's Murdock 1, NEc 7-6-4w, sd 365 ft.

ELLIS COUNTY—J. Allen Harvey's Polifka 1, SEc NW NE 18-13-17, fsh 2630 ft. Jas. Davis et al's Smith 1, NWc 14-13-16w, fsh 2740 ft.

GEARY COUNTY—Liberty-Texas Oil Co.'s Wright 1, NEc 9-12-6, sd 750 ft; Foster 1, NEc SW 30-12-6, sd 2000 ft.

GRAHAM COUNTY—Keyes Bros. & Marine's Taxton 1, SEc NW 23-8-24w, dr 1100 ft.

FINNEY COUNTY—Garden City O. & G. Co.'s Wann 1, SEc SE 36-21-30, sd 2890 ft.

GOVE COUNTY—Keyes Bros. & Marine's Unkown 1, NWc SW 23-13-26w, core dr.

JEFFERSON COUNTY — Northern Counties' Edwards 1, SEc NW NW 13-8-19, sd 3398 ft.

KINGMAN COUNTY—Hale et al's Graber 1, SWc NW 34-27-7, sd 2543 ft.

LINCOLN COUNTY—Berry & Rosenthals' Lambert 1, C NW 31-12-10w, dr 3090 ft. Amerada Pet. Corp.'s Crawford 1, NEc SW SE 16-11-7w, set cas. Equity Oil Co.'s Jellison 1, NWc SE 19-13-9w, sd 2700 ft. Scott & Collins' Stone 1, SEc SW NE 19-11-6w, sd 50 ft.

NEMAHA COUNTY — Nemaha O. & G. Co.'s Meyers 1, NWc 19-3-11, sd 3250 ft.

OSAGE COUNTY — Rodgers & Bittle's Bertha 1, SEc NW 22-17-16, lcn. Mul-Vit Dev. Co.'s Neil 1, NEc NW SW NE 8-17-17, sd 2735 ft. Moyer et al's Williams 1, NEc SW NW 12-18-14, dr 2000 ft. Baker et al's No. 1, C SE SE 3-10-14, sd 260 ft.

POTTAWATOMIE COUNTY—Crawford et al's Stewart 1, C E L SE SE SE 17-9-12, rig; Greishabert 1, SWc SE SE SW 31-9-18, rig; St. Mary 1, SWc 11-1-12, sd 2290 ft.

RICE COUNTY—Rino Oil Co.'s Decall 1, SEc SW NW 35-19-8w, dr 3730 ft. Emerson Carey's Bush 1, NEc 7-20-6w, sd 3565 ft. Stamey et al's Barnes 1, SEc NE 21-20-6w, dr 2750 ft. Jasper & Beschka's Walker 1, SWc NE 10-18-6w, sd 1752 ft.

RILEY COUNTY—Pawnee Oil Co.'s Marks 1, SEc NE NW 26-10-6, sd 1700 ft.

ROOKS COUNTY—Keyes Pet. Co.'s Saindon 1, NWc SW SE 7-8-20w, spudded and sd.

RUSSELL COUNTY—P. & R. Corp.'s Haise 1, NWc SE 24-12-15w, dr 3620 ft. Amerada Pet. Co.'s Milke 1, SWc SE SW 20-12-15w, dr 3474 ft. Pomeroy et al's Cooper 1, SEc 33-12-11w, sd 2000 ft. Alcorn Oil Co.'s Seller 1, SEc 36-15-12w, dr 3090 ft.

SEWARD COUNTY — C. T. Dev. Co.'s Woods 1, NWc NE 34-34-34, sd 700 ft. Seward O. & G. Co.'s Selsey 1, NEc NW 2-33-33, dr 2427 ft.

SALINE COUNTY — Thrall et al's No. 1, SEc NE NW 15-15-4w, sd 1010 ft.

TREGO COUNTY—Keyes Pet. Co.'s Walsh 1, NWc SE 5-11-25w, sd 1450 ft; Walsh 2, SWc NE SW 5-11-25w, sd 1550 ft; Davis 1, NEc SW 16-11-24w, sd 3030 ft.

WABAUNSEE COUNTY—Williams et al's No. 1. NEc SW NE 15-13-12, dr 3600 ft.

WASHINGTON COUNTY—Barnes O. & G. Co.'s Wickham 1, SEc SW 9-5-5, sd 1305 ft.

WOODSON COUNTY — Equity Oil Co.'s Soloman 1, SWc NE NW 30-26-17, sd 3340 ft. Herman & Oglisby's Lauber 1, SWc 4-26-14, sd 850 ft.

Oklahoma Wildcats

ALFALFA COUNTY—McGuinnis & Ward's Watts 1, C NE SW SE 21-27-10w, cemt 6-inch 3240 ft. Armstrong, Henley & Piffles' Turnbull 1, C NW SE NW 25-24-11w, dr 500 ft.

ATOKA COUNTY — McPhearson et al's Wild 1, SWc NW 7-2-9, sd 4323 ft. Henson et al's Dabney 1, C SE NW 17-4-11, rebuilding rig, td 2260 ft. J. P. Torrance et al's Fee 1, SWc NE 1-2-9, sd 2235 ft, hfw. Wapanuka Dev. Co.'s Underwood 1, C W L SE SE 28-2-9, sd 1343 ft.

BLAINE COUNTY—Meyers et al's Chron-

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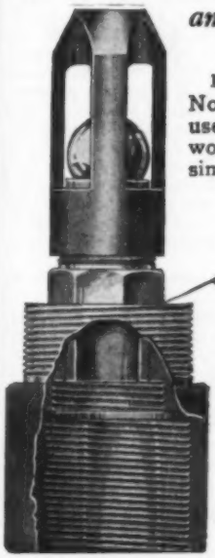

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ister 1, SEc NW NW NE 7-18-15w, sd 965 ft. Thompson's Dickerman 1, C SE SE SE 26-15-12w, sd 3213 ft. Okomo Oil Co.'s Ekleman 1, SWc 21-13-10w, sd 2610 ft.

BRYAN COUNTY—Alexander's Hampton 1, SEc NE 26-7-11, sd 1400 ft.

CANADIAN COUNTY — Thos. Revelle's Dawson 1, SEc 34-13-9w, sd 2640 ft. Carroll et al's Setter 1, SEc 2-13-8w, sd 110 ft.

CLEVELAND COUNTY — Carr Oil Co.'s Holland 1, NEc SE 31-10-4, sd 2620 ft.

CUSTER COUNTY—Hoover Oil Co.'s No. 1, NWc SE 17-13-14w, sd 2510 ft. Magnolia Pet. Co.'s Cutfinger 1, NWc SE 17-13-14w, fsh 3685 ft.

COAL COUNTY—Bearman et al's Payte 1, SWc NW NE 32-2-9, sd 2780 ft.

GRANT COUNTY—Embry et al's Edwards 1, C SE SE NW 20-26-4w, sd 1000 ft. Midwest & Gulf's Moon 1, NEc NW 8-27-8w, sd 2490 ft. Phillips Pet. Co.'s Ridings 1, NEc SE NW 29-29-4w, dr 4667 ft. Frank Travis et al's Fuss 1, SWc NW NW 3-27-4w, sd 1000 ft.

GREER COUNTY—Neal et al's Johnson 1, SEc NE NW 3-7-22w, dr 1245 ft. Boss & Terrill's Van Victor 1, C SW SW 4-3-22w, dr 1825 ft.

HUGHES COUNTY — Mathers & Skelly's McClain 1, C SW SW 4-5-11, r 3026 ft. Dixie Oil Co.'s Irvine 1, SW NW SE SE 18-8-10, dr 3040 ft.

JEFFERSON COUNTY — Shawver et al's Anderson 1, SEc NE 31-4-8w, sd 1200 ft. Landis et al's Standfield 1, SEc 33-7-6w, dr 1350 ft. Roy Johnson's Mullen 1, NEc NW 9-4-4w, dr 2410 ft. Barker et al's Major 1, C SE SW 34-5-6w, spd and sd. Godley Oil Co.'s Woodworth 1, C NE NW 36-5-4w, sd 495 ft. Lugg et al's No. 1, C SE NW NE 3-7-7w, fsh 2380 ft.

JOHNSON COUNTY — Washita O. & G. Co.'s Trootes 1, C SE SE 7-4-4, sd 2180 ft. United "8" Oil Co.'s Holden 1, NWc SW NW 36-5-6, sd 2330 ft.

KAY COUNTY—Day Oil Co.'s Vandatta 1, SWc NW 8-26-2w, fsh 2835 ft.

KIOWA COUNTY—Connor et al's No. 2, NEc NW NW 34-7-16w, dr 915 ft. Aubyme Oil Co.'s No. 1, SWc NE 3-7-17w, sd 2135 ft. Alcorn Oil Co.'s No. 1, NEc SE SE SW 13-7-16w, dr 1290 ft.

LINCOLN COUNTY—Sun Ray Oil Co.'s Gallagher 1, C N L SE SE 18-13-5, sd 3825 ft. P. & R. Corp.'s Hainzig 1, SWc NW SW 14-13-6, fsh 2500 ft. Douglas Oil Co.'s Ewing 1, NWc 7-13-3, sd 2965 ft. J. C. Cook's Richardson 1, SWc NE SW 8-12-5, dr 1855 ft. Eugene Costa's Dodrill 1, SEc NW 26-12-2, dr 2055 ft. Wilcox O. & G. Co.'s Smith 1, SEc SW NE 12-12-3, lcn.

LOGAN COUNTY—Buford-Brim Oil Co.'s Newman 1, NWc NW 32-19-3w, sd 2345 ft. Oklahoma Drilling Co.'s Johnson 1, SEc SW 36-15-2w, sd 1716 ft. Franklin Oil Assn.'s Moore 1, NWc SE SE 28-19-4w, sd 2018 ft. McMunn & Nixon's Fields 1, SWc NE SE 35-17-4w, rig. Haley & Poineer Pet. Co.'s Quair 1, SWc SE 33-18-3w, rig. Pluto O. & G. Co.'s Lair 1, C S L N½ SE 28-16-1w, co 750 ft. Gilliland Oil Co.'s Ohm 1, C NW 5-19-2w, sd 2125 ft. Magnolia Pet. Co.'s Pritchard 1, NWc 23-15-1s, sd 2775 ft.

LOVE COUNTY—Driller Syndicate Oil Co.'s Wilson 1, NWc SE 11-7-2w, sd 2830 ft. Simms Oil Co.'s Starritt 1, SEc NE SE NE 29-6-3w, dr 2060 ft.

MAJOR COUNTY—Texas Prod. Oil Co.'s Basin 1, SWc 6-22-14w, spd and sd. Bradstreet Oil Co.'s Ratcliffe 1, C SW 9-22-9w, fsh 3015 ft. Frantz & Slick's Gray 1, C NW 36-21-11w, sd 1000 ft.

PONTOTOC COUNTY — Harper et al's Dener 1, NWc SE SE 19-6-7, dr 2705 ft. Smith et al's Norris 1, SWc SE 34-4-6, sd 2430 ft. Riverside Oil Co.'s McFarland 1, NWc NE NW 4-5-5, sd 650 ft. C. J. Wrightsman's Floyd 1, SWc NW NE 24-4-4, dr 2500 ft. Galloway et al's Hays 1, NEc SE NW SW 13-3-6, sd 1160 ft. Craig et al's Starritt 1, NWc NE 5-4-5, sd 600 ft. Brinson et al's Brown 1, SEc SW SE 32-5-5, dr 400 ft.

OKLAHOMA COUNTY—Firestone Oil Co.'s School 1, NWc SE 36-11-3, dr 4148 ft.

POTTAWATOMIE COUNTY — Ossie Oil Co.'s Howell 1, SWc NE 17-10-2, dr 2965 ft. Davis Detrick's McGathey 1, SEc 10-6-2, r 3850 ft. H. C. Guinnup et al's Floyd 1, SWc SE 12-11-3, sd 3670 ft. North American Oil Co.'s Madgett 1, NWc 25-10-4, sd 460 ft. Maud Oil Products Co.'s Yinson 1, NEc SW 18-7-4, sd 2935 ft. McMann Oil Co.'s Neghan 1, SWc NW 19-7-4, sd 100 ft. Day Oil Co.'s Bell 1, SEc NW NE 9-5-3, bailing 4021 ft, hfw. Halmond Osmond et al's Fiddler 1, SEc NW 4-5-5, sd 545 ft.

ROGERS MILLS COUNTY—Twin Hills Oil Co.'s McClure 1, NWc 15-16-26w, sd 3600 ft. Trio Oil Co.'s No. 1, SEc NW SW 3-13-26w, sd 3060 ft.

SEMINOLE COUNTY — Maxwell et al's

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Charty 1, C NE NW 33-6-6, cas trouble 2050 ft. Link Oil Co.'s Carolina 1, C SE NW 14-6-7, sd 2840 ft. T. B. Slick's Sanny 1, 19-6-7, dr 3360 ft. Wm. McDougal Dindy 1, C SW SW 30-6-7, sd 3350 ft. R. F. Garland's Farlin 1, C NE NW 6-6-18w, cas trouble 1390 ft.

WASHITA COUNTY—McCoy et al's Praeters 1, C SW SW NE 9-8-15w, sd 3115 ft.

WOODS COUNTY—Victor Oil Co.'s Van Buskirk 1, SWc SE 10-25-15w, sd 960 ft.

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Louisiana Wildcats

Company, Well and Location	Initial Production Bbls.	Depth
Bossier Parish—		
Zink et al's McGuffin 1, 4-18-11....	*	700
West Carroll Parish—		
Orion Oil Co.'s Bain Wagon Co. 1, 23-23-10e.	*	3765

DRILLING REPORT

BIENVILLE PARISH—Roxana Pet. Co.'s Bryan 1, 30-17-6, dk.

BOSSIER PARISH—Armistead et al's Bernstein 1, 11-20-13, sd 1180 ft. Atlantic Oil Prod. Co.'s Bodcau 1, 24-23-12, plugged back to 2716 ft. Coker et al's Rhodes 1, 31-21-11, dk tmbrs. Skannal et al's McDade 2, 10-17-12, set 6-inch 2444 ft. Standard Drilling Synd.'s Johnson 1, 18-18-11, old well to resume dr 1080 ft. Wetherbee et al's Bolinger 1, 31-23-11, dr 1915 ft. Webb et al's Catlett 1, 27-19-11, abn 1100 ft.

CADDO PARISH — Ark-Caddo Oil Co.'s Nickerson 1, 30-19-15, sd 2450 ft. Brewer et al's Sharp 1, 10-18-16, rig. Caddo Western Gas Co.'s Gardner-Blades 1, 2-16-15, sd 2865 ft. Crude Oil Co.'s Alexander-Ledbetter 1, 27-16-14, sd 3666 ft. Glassell et al's Florsheim 1, 9-17-16, dk. Gulf Ref. Co.'s Ferry Lake 216, 14-20-15, dr 4325 ft. Lewis Oil Corp.'s C. M. L. 5, 24-23-15, rig. Richardson Oil Co.'s Bickham 1, 15-18-15, sw 970 ft; dr 1400 ft. Stith et al's Gay Pitts 1, 11-23-16, dk. Waterman Drlg. & Dev. Co.'s Waterman 2, 18-17-16, set 8-inch 925 ft.

CALDWELL PARISH—Culver et al's Culver 1, 21-14-4e, dr 3130 ft.

CLAIBORNE PARISH — Black O. & G. Co.'s Aubrey 1, 20-21-8, sd 1450 ft. Claiborne-Lincoln Synd.'s Fields 3, 22-19-5, lcn. Collins & Woodley's Fortson 1, 28-21-5, rig. El Dorado Chief Oil Co.'s McElwee 1, 13-22-7, sd 2021 ft. Gulf Ref. Co.'s Palmer 1, 35-23-6, sd 3230 ft; repairing boiler. Pomeroy et al's Hurman 1, 34-20-6, dr 2440 ft.

DE SOTO PARISH — Daniels & Roscoe's (Greyhound Synd.) Pollack 1, 36-11-24, set 6-inch 2390 ft. Tarver et al's Palmer 3, 3-11-14, rig. Wright et al's Sutherland 2, 19-12-14, sd 2614 ft.

LA SALLE PARISH — Bur-Ban Oil Co.'s Urania 2, 21-11-2e, sd 1790 ft. Columbia O. & G. Co.'s Urania Lumber 1, 22-10-2e, sd 200 ft. Gulf Ref. Co.'s Urania 1, 22-11-2e, dk; Urania A-1, 22-11-2e, sd 1022 ft. Stovall Drlg. Co.'s Louisiana-Central Lumber 2, 27-10-2e, sd 2000 ft. Urania Pet. Co.'s Urania 4, 20-10-2e, sd 1573 ft.

LINCOLN PARISH—Buckner et al's Bar-

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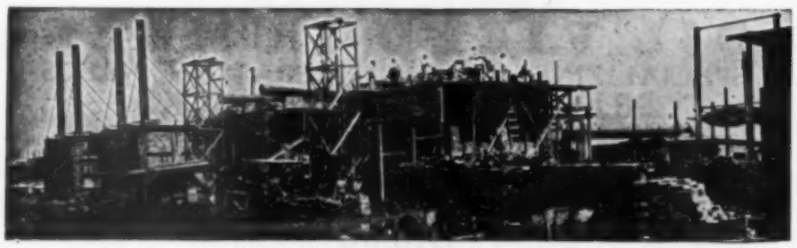
PATENTS
Patents Obtained, Trade Marks, Patent Causes
JESSE R. STONE
Formerly Assistant Examiner United States Patent Office
Andrews, Streetman, Logue and Mobley
12th Floor Union N. Bk., Houston, Texas

PATENTS OBTAINED FOR INVENTORS
JACK A. SCHLEY
U.S. PATENT ATTORNEY
305 INTERURBAN BLDG., DALLAS



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rett 1, 13-20-3w, setting 8-inch 1050 ft; total depth 1220 ft.

OUACHITA PARISH — Dickson & Frue's Goodwin 1, 24-18-2e, dr 2035 ft.

RAPIDES PARISH—Acme Drlg. Co.'s Barrett 1, 20-5n-1w, r 4517 ft. Pearson et al's Pearson 1, 7-4n-3w, testing 3054 ft.

RED RIVER PARISH — LeGrande et al's Fee 3, 2-14-12, sd 2440 ft.

UNION PARISH—Cargile et al's Heard 1, 21-21-2w, sd 2409 ft. Jones & Walker's Feazel 1, 6-18-2e, dr 1225 ft. Roxana Pet. Co.'s Voss 1, 18-22-2w, lcn. Simms Oil Co.'s James 1, 16-22-3w, dk tmbrs.

WEBSTER PARISH — Belchic & Laskey's P. W. L. Co. 5, 33-23-11, dr 1700 ft. Bethany O. & G. Co.'s Wiley 1, 1-22-10, dr 2345 ft. Haenlen et al's Roberts 1, 9-23-10, rig. McDowell et al's Hortman 1, 15-20-10, sd 1650 ft.

WINN PARISH — Galloway & Arrendale's McCarty 1, 5-12-1w, set 10-inch 200 ft.

Arkansas Wildcats

COMPLETION

Company, Well and Location	Initial Production Bbls.	Depth
Nevada County—		
Murray et al's Eaves 1, 11-12-23....	*	1409

DRILLING REPORT

CLARK COUNTY — Southern Drlg. Co.'s Burrows 1, 35-10-20, sd 714 ft.

COLUMBIA COUNTY—Brown et al's Robinson 1, 23-18-23, sd 3034 ft. Hargis et al's Souter 1, 24-17-22, sd 35 ft. Heath Trust's Williams 1, 1-19-21, fsh 2175 ft. Johnson et al's Saliles 1, 18-17-22, sd 915 ft. Kemp et al's Emerson 1, 7-19-19, dr 1650 ft. Miller et al's Watts 1, 20-16-18, abn 1890 ft. Morgan & Gaughan's Morgan 1, 3-19-15, rig. Phillips et al's Davis 1, 15-18-21, sd 1700 ft.

DALLAS COUNTY — Durr et al's Riggs-Matlock 1, 33-8-15, sd 2400 ft.

DREW COUNTY—Graves et al's Karnes 1, 20-14-6, sd 2386 ft. King & Wilson's Trotter 1, 12-13-6, sd 1250 ft. Rhodes et al's Harris 1, 5-13-8, to set 6⅝-inch 2175 ft. Spooner et al's Meyer 1, 4-16-7, sd 50 ft.

GRANT COUNTY—Arnold & Hill's Meeks 1, 8-4-11, dk. Haley & Evan's Pike 1, 8-6-11, sd 50 ft.

HEMPSTEAD COUNTY — Fullilove Drlg. Co.'s Ford 1, 31-14-23, dr 2225 ft. Hempstead Oil Co.'s Nicholls 1, 17-11-25, sd for cas 1980 ft.

LA FAYETTE COUNTY — Ken-Saw Pet. Co.'s Red River Valley Lumber 2, 3-20-24, dk.

LINCOLN COUNTY—Bennett et al's Jones 1, 33-10-6, dk. Cambrian et al's Fee 1, 3-9-8, set 8-inch 1100 ft.

LITTLE RIVER COUNTY—Gaines et al's Thomas 1, 15-13-29, dr 3600 ft. Grote et al's Allen 1, 2-13-29, sd 3000 ft. Johnson et al's Hawkins 1, 10-11-31, sd 1350 ft.

NEVADA COUNTY — Kan-Ark Oil Co.'s Honea 1, 12-13-21, sd 1840 ft. Ouachita Valley Oil Co.'s Phillips 1, 30-14-20, dk. Prescott Oil Co.'s Henry 3, 10-12-20, sd 1000 ft. Zingg et al's Groves 1, 22-10-23, dr 600 ft.

OUACHITA COUNTY — Bray & Hawthorne's Copenhagen 1, 13-14-17, fsh 2142 ft. Dee et al's Criner 1, 21-15-19, dk. Reynolds & Thompson's Graves 1, 16-14-18, dk.

UNION COUNTY—Berry et al's Union S. M. 1, 14-19-11, sd 875 ft. Harrell Trust's Teele 1, 11-19-12, sd 3177 ft. O'Brien et al's Fee C-1, 13-19-17, lcn. Traffic Oil Co.'s Goodwin 1, 20-16-14, sd 3026 ft.

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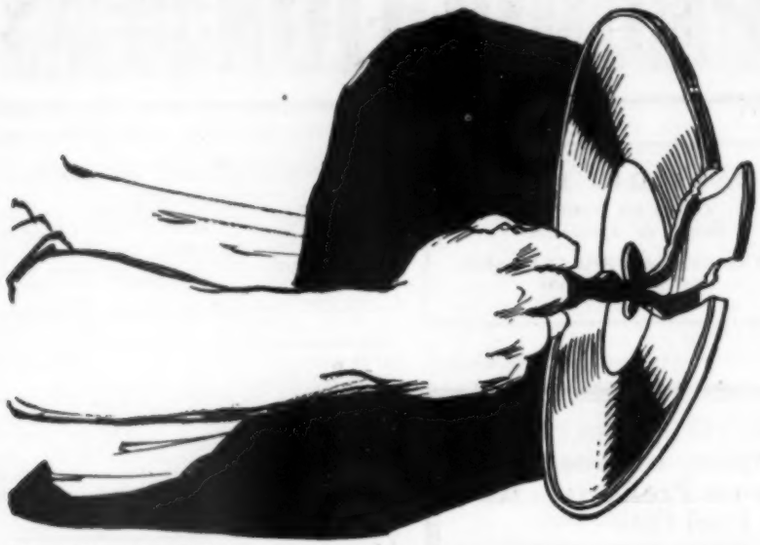

Another Record Smashed with no. 6

TITUSVILLE ACME ROTARY EQUIPMENT

"The Rig with the Punch"

Waggoner and McKinley
ROTARY DRILLING CONTRACTORS
[illegible]
LOLING, TEXAS

September 12th 1924

Titusville Iron Works Co.
Titusville, Pa.

ATTENTION: MR. McWILLIAM

Gentlemen:

It may perhaps be of interest to your company to know that the two Number Six Acme Rigs which we are using in this field are giving us the greatest possible satisfaction.

On August 13th we started the Rig # 13 of the United North & South Oil Company, and on August 31st completed the cutting of 3091 feet of 6-5/8" Casing, having made a record run for this field of five days and nineteen hours, as against the former record of seven days five hours, which was the best made until this time.

We are also making far better than the average time with these rigs on our other locations, and feel that we cannot speak too highly of the merits of these outfits.

Yours very truly,
WAGGONER & McKINLEY
By [signature]

The Waggoner McKinley crews who worked with Titusville Equipment in making this new record are: H. L. Rudolph, J. R. Myrick, R. Hathaway, V. E. Tarbutton, W. O. Head, E. W. Hargrove, B. F. Bissonnet, O. B. Jennings, S. G. Uzzell and C. W. Evans.

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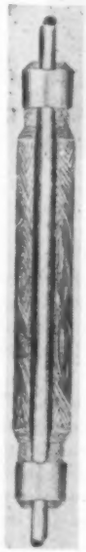
NEW EQUIPMENT, CATALOGS, BULLETINS, BOOKS

S-R Tubing Protector Cuts Down Rod Troubles

Elimination of rod troubles in pumping wells is but one of the distinctive features of S-R tubing protectors which have been perfected by H. Rickman, of Tulsa, who is manufacturing and selling them to the trade.



The S-R tubing protector is made of oak and walnut, correctly tapered and adjusted and fitted onto the rods by ferrules made of seamless steel and, according to the manufacturer, can be put on and taken off in two minutes time. The wood is chemically treated before being put in the well and is thus insured against becoming heavy and absorbing water, oil or other substance in the hole.

Use of the S-R protector has reduced pulling jobs, the manufacturer states, and has eliminated split joints and prevented pins and boxes wearing off. The protector also is useful in aligning tubing in the well and keeps the rods in the center of the tubing, thus eliminating side slapping.

The S-R tubing protector is in use by some of the larger companies in the field and is made in two sizes—light and heavy.

H. Rickman, Tulsa, Oklahoma, will furnish further information.

Instant Operation Casing Head Latch Is Successful

A casing head latch designed for instant operation is among the latest devices being marketed by the Robinson Packer Company, Tulsa, Oklahoma.

Ease of operation and economy are the two outstanding features of the latch. It grabs the oil saver or sand cap instantly and prevents workmen being drenched. Bill Long, an official of the Robinson Packer Company, in describing the operation of the latch, says, "Either grab the handle with your bread hooks, swing it 6 inches, or give 't a swift kick with your trilbys and the job is done".

The company will supply additional details upon inquiry.

Agathon Steel Described

A booklet devoted to steel products of The Central Steel Company, Massillon, Ohio, has recently been published by that concern.

Agathon Alloy Steel is a specialty of the company and the booklet gives a complete discussion of that product. "The Story of Agathon Steels," tells in detail, about all the process involved in making alloy steel. Descriptive charts are included to emphasize definite characteristics of Agathon. In addition a number of special photographs and drawings are used to illustrate the product in its different stages of manufacture.

Copies of the booklet are for free distribution to any one interested, and may be had by addressing the company as above.

Heat Treatment Simplified

Since steel bits have come into such wide use along with steel in many other kinds of oil field tools, the subject of heat treatment has received much attention. Heat treatment of bits has been discussed in various publications by steel experts. But it has remained for a famous metallurgist to go into the subject on an extensive scale.

"Heat Treatment of Soft and Medium Steels", by Federico Giolitti, is undoubtedly the most comprehensive text ever published on this subject. It goes into the problems of heat treatment from the scientific viewpoint and draws conclusions based on laboratory work covering long periods and making use of every possible condition that the metal treated might have to undergo. The author's experience has given him a knowledge of steel which few men have and in the book he has accumulated conclusions from his experience.

Metallurgists and engineers will find in this treatise a reference book of rare merit in a technical library. It may safely be called a foremost authority in its field. Copies can be secured from The Gulf Publishing Company, P. O. Box 1307, Houston, Texas.

Sand-Proof Working Barrel Is Also Double Acting

Sand and other granular matter suspended in oil has long been the source of loss and trouble, and working barrel manufacturers are constantly striving to perfect a barrel which will reduce sand trouble to the minimum. Marion Machine, Foundry and Supply Company, Marion, Indiana, has secured patents on a working barrel which it claims is sand-proof.

This barrel is designed to prevent fine sand settling around the valve cups and cutting them out in a very short time. Freedom from sand greatly prolongs the life and usefulness of cups and prevents loss of oil incident to frequent replacing of cups.

Parts of the Marion barrel consist of a standing barrel, valve body, the working barrel and the working valve body.

In operation the upward stroke pulls the oil through the lower ball and seat valve into the partial vacuum created in the standing barrel when the upward stroke is made. In the downward stroke, the oil is forced through the upper ball and seat valve into the tubing thus creating a continuous stream or flow of oil.

The upper valve cage is screwed into the working barrel and is said to completely shut off the fine sand from settling into the valve cups.

Stationary and movable parts may be pulled to the surface as a unit for renewing cups or any other parts which may happen to be worn, thereby dispensing entirely with the necessity of pulling the tubing together with the standing barrel. The barrel is double-acting, pumping oil on both the upward and downward stroke.

Accumulations of sand on the top of the barrel can be washed back into the well by raising the barrel off the seat in the lower tapered nipple.

Any pumper in the field can take the barrel apart and re-assemble it.

The Marion Machine, Foundry and Supply Company, Marion, Indiana, will gladly supply further details and information concerning the barrel.

Petroleum Engineer Needed By U. S. in New Mexico

Receipts of applications for associate petroleum engineer will close December 9. The examination is to fill vacancies in the Bureau of Mines, Department of the Interior, for duty at Shiprock, New Mexico, at an entrance salary of $3,000 a year. Advancement in pay may be made without change in assignment up to $3,600 a year.

The duties of the position are to supervise drilling and production of oil and gas on government lands and

The OIL WEEKLY will print on this page data on new oilfield equipment, improvements on old equipment, news of new catalogs, bulletins, etc. This department is handled exclusively by the editorial department and has no connection with the advertising department. Data will be carried on anything which the editorial department thinks of interest to our readers, regardless of whether or not the manufacturer is an advertiser in the The OIL WEEKLY.—Publisher.

Manufacturer and Supply Dealer Notes

Indian lands; to conduct investigations on methods of drilling and producing oil and gas; the protection of oil, gas and water strata; studies of underground conditions in oil and gas fields, and other problems relating to the conservation of oil and gas.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience; and publications, reports, or theses to be filed with the application.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil-service examiners at the post office or customhouse in any city.

Los Angeles Shipments Continue to Decline

Los Angeles, Calif., Nov. 8.—The movement of crude oil out of Los Angeles Harbor during October to Pacific domestic ports almost equalled the movement to Atlantic domestic ports. During last month a total of 5,589,200 barrels of crude moved from Los Angeles Harbor to all points, of which 2,547,975 barrels went to Atlantic domestic ports, 2,436,589 barrels to Pacific domestic points, 109,997 barrels to Pacific foreign ports and 494,639 barrels through the Panama Canal to foreign points.

A major portion of the crude moving to Atlantic domestic ports was to the Standard of New Jersey, most of which was shipped by the Standard of California. Three cargoes during the month carried 299,817 barrels of crude to Standard of New Jersey from the Petroleum Midway, while shipments to the Standard by Petroleum Midway during September was 214,972 barrels, thus making a daily average movement over the two months period between these two companies of 8,439 barrels.

Crude movement out of Los Angeles Harbor to Atlantic domestic and Atlantic foreign points last month totaled 3,042,614 barrels, or a daily average of 98,149 barrels. This against a daily average in September of 106,899 barrels, during August 91,412 barrels daily average, and 116,760 barrels daily average in July.

During October, a total of 631,843 barrels of gasoline went to all points, of which 167,654 barrels went to Pacific domestic, 82,501 barrels to Pacific foreign, and 301,014 barrels to Atlantic foreign. Total of 1,873,539 barrels of fuel oil moved, of which 933,568 barrels went to Pacific domestic, 819,908 barrels to Pacific foreign and 120,063 barrels to Atlantic foreign. Movement of other products were small.

These shipments do not include those out of the San Francisco bay district.

Picture taken in England last August at the Wembly exhibition of oil field equipment. Reading left to right: Paul Arbon, Tulsa Okla.; Gordan Guiberson, S. A. Guiberson, Jr., and Allen Guiberson. All of Los Angeles, Calif. Gordan and Allen are the sons of S. A. Guiberson, Jr.

New warehouse recently completed by the International Derrick and Equipment Company at Houston

New Houston Warehouse To House "Ideco" Equipment

Houston, Texas, November 13.—Increased facilities for stocking its products within ready call of the Texas oil fields are being provided in this city by the International Derrick and Equipment Company. A new warehouse located at the corner of Hughes and Polk streets has recently been completed.

Just how important this is to the oil producer is readily appreciated. The old saying, "Time and Tide wait for no man" is just as true of storms, fire and bringing in a well. When a storm strikes home it generally leaves behind a toll of leveled derricks and smashed equipment. The natural impulse of the oil producer is to get those wells back into production as quickly as possible. That means getting a derrick on the ground promptly.

To help meet such emergencies, The International Derrick and Equipment Company has built this new warehouse. Adequate stocks of "Ideco" Galvanized Steel Derricks in the sizes used in nearby fields are carried. Not only are derricks carried, but a complete stock of other steel rig equipment manufactured by the International Derrick and Equipment Company, such as bull, band, calf wheels, walking beams, pitmans, tug rims, and crown blocks.

Lucien Powell, the district manager in charge of the Houston office and the warehouse, feels that the stock he is now enabled to carry will cover any ordinary emergency brought about by fire, wind or the discovery of a new field in his territory.

New Houston Firm to Deal In Oil Field Specialties

Houston, Texas, November 13.—Houston Engineers, Incorporated, is a new firm recently organized to deal in oil field tools. The company was organized by Charles R. Edwards, Charles W. Markle and Tracy T. Ward.

The company will handle the sales of a special line of all-rotary releasing tools.

Erle P. Halliburton, president of the Halliburton Oil Well Cementing Company, Tulsa, Oklahoma, is in California on business in connection with the Rotary Drilling Machine which is in operation on the property of The Union Tool Company.

Is your job a better job to-day than when you started on it? If not—why not?—Atlantic Connecting Rod.

Gulf Refining Company

OKLAHOMA
TEXAS
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Refiners of PETROLEUM

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REFINED OIL
NAPHTHA
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Magazine Point (Mobile), Ala.

Providence, R. I.
Jacksonville, Fla.
Galveston, Texas

LETTERS OF Paul Peebles P.S.G.

mi deer cleopatry

well cleo hunny I gotten back from Bomount just like I thort I wood in mi ford all ok. yu no I told yu last week that I did not no for shure when I started when I wood git back in it, but that was just a joking because mi lizzy is a good 1 & mostly goes. however, she is a littel stove up now on account I went on down to port arthur & a nigger run in behind & kinder busted up lizzies bussel a little so I had 2 take it off.

the bussel whitch I refers 2 in a playful manner is the reer bumper whitch is put on behind so peepul will not run in2 yu, but I think it is a snare & a deludge because I aint never yet had no axcidents from behind escept sumboddy run in2 the bumper, so it does not keep them from it.

besides that & the usuwal luck of fixin tires whitch is mutch moar harder when yu hav got wimmin along on account yu can not talk 2 the tire like it was intended from the foundashun of the werld that fords shud be talked 2 under proverkashun, on account it aint polite 2 talk that away when it is laddys present. But it is a pretty good tranin for me in self control.

well hunny I gess yu seen in the papers that it is just like I sed it wood be about the election, & I gess no laffalot will not laff so mutch except mabe out of the other side of his face, if it is got anuther side whitch I do not espect it has from the side I hav seen in his pictures, or elst he wood turn around 2 git his pitcher tooken.

but it all just goes to show what the oil men in this cuntry can do when it comes to electin a pres. the lection cummin on in the fall when evryboddy has got his mine on the zero cold test made a fine sikological situashun for keepin cool with coolidge whitch giv him the vote of the oil men unanimus like. also charley dawes is a kinder brother in law to the oil bizness so he helped out sum 2.

I bet it is a few peepul in the oil bizness whitch hopes that the pres. will remember in grattytude about how the election went, sinct teepot dume was a ishure in the campane.

the trubbel with laffalot was just like I hav bin tellin yu all of the time. yu remember 1 time a few yeres ago when he was tryin 2 greeze the skids for hiself in2 the pres. offis with foolin with the oil bizness & makin up lies about it, he sed that the prise of gasleen wood soon be $1 a gallon. well when he gotten reddy 2 run the prise of gasleen was down 2 fifteen sents a gallon whitch was enuff to make every boddy but the peepul in wisconsin know that old bob dont no nuthin about the oil bizness nor neether enuff 2 be a pres of the united states.

hunny I hav alwaze bin a stonewall jackson demycrat all mi life but dont yu say nuthin about it because now the cuntry has gone republikan agin I will hav 2 be a republikan 2 see what I can git mabe in the way of a offis.

but gittin back on the propershishun of the prise of gasleen & what laffalot noes about it, anuther thing whitch mabe helped 2 beet him was what walter teegle sed the other day just before the election about the prise of gasleen & fuel oil. he sed that it is soon goin 2 be so that the refinries will not sell nuthin but fuel oil & will giv away the gasleen 2 ennybody whitch will pay the frate, just like the goverment will giv away buffalo bulls if yu will rite for them & pay the frate. only this sounds kinder like a bull itself & I do not beleev that it will ever be like that.

hunny I hav bin thinkin about the gasleen bisness & the trubbel they are all the time havin with it on account of the prise bein so low & makin it hard for the perdusers, so I hav thunk up a skeem whitch I do not no how I am goin 2 sell the ideer 2 the peepul whitch is direckly intrested. I meen henry ford & jno. d. rockerfeller.

what I think wood be a good skeem for them wood be for them 2 consolidate there bizness on a mutual particip atin basis so that in plase of sinin notes when yu buy a ford car fob yu sine a contrack 2 use a sertain kind of gasleen whitch will be specerfied in the contrack, also oil & agree 2 run the car a sertain milage & change the oil evry wunst in awhile. them will just be jokers in the contrack 2 make it look moar leegeler. so then the cars wood be giv away so that evrybody will hav 1 & it will not be no used fords for sail no moar whitch wood be a publick bennyfaction werthy of a kroy de gear, & ford cood still git ritch off of sellin parts & the difrents after fob detroit, & jno. d. cood sell lots of gasleen & oil.

now hunny that mabe will sound foolish 2 yu, but it aint no worse than the oil co's givin away pumps & tanks 2 sell gasleen threw. so yu see hunny I am a finanshul geenus & well as a scientifick man & the only reesen I aint never got big ritch is because I have bin hidin mi lite under a bushel.

well that is enuff of worryin yore pretty hed about politicks & bizness, on account anyway yu bein a woman yu do not no verry mutch about them ennyway, so I will tell yu sum moar about mi persenel afares.

yu no I told yu I was goin 2 keep mi eye peeled for a plase for a new gulf coast feeld while I was goin 2 bomont. well I cood not git the lay of the land on this trip on account it was so dusty that the land was not layin but was all up in the air. the best time 2 hunt dumes is in the rainy wether when the ground is all settled & yu can see the dumes kinder stickin up out of the watter.

so when I cum back from that trip I had a confrents with sum of the big co officials in huston & what they wanted 2 no from me was the prospecks of a new feeld rite away in the gulf coast so I had 2 tell them that it wood not be 1 for a long time mabe, so they went ahed & rased the prise of crude. but I do not git no credick from the industry for mi remarkable influents on the situashun when I forecasts things, but neether do I care.

well hunny I will have 2 stop ritin now on account it is time 2 go eet. that is the onliest thing that can stop me when I am ritin 2 yu, but I am hungry.

hoping yu are the same.

yore lovin paul.

Many Improvements Being Made in Axelson Plant

Los Angeles, Calif., Nov. 13.—Several changes and additions to its already extensively equipped plant, are being made by The Axelson Machine Company. Every one of the many machines in this company's large tool room is being equipped with individual motor drive, a feature which not only improves the looks of the equipment, but makes it much easier for repair work and shut downs to be handled.

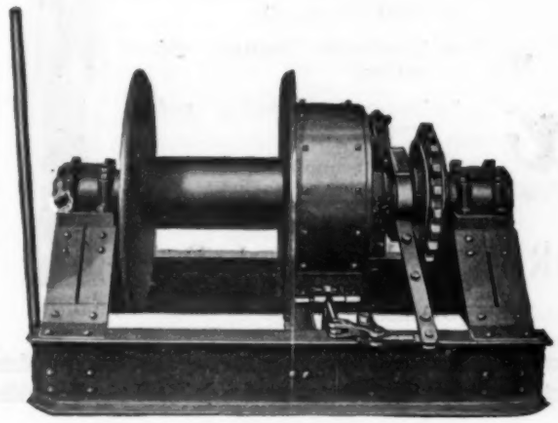
A Browne and Sharpe grinder and a Cincinnati milling machine are among other additions to the tool room.

A new power plant has also recently been completed by the company. Equipment in the plant includes a 6-cylinder 125 h.p. Holt tractor, engine mounted on a concrete base and belt connected with a 220-volt generator. The plant is housed in a separate building on Axelson property and is to be used for emergency situations.

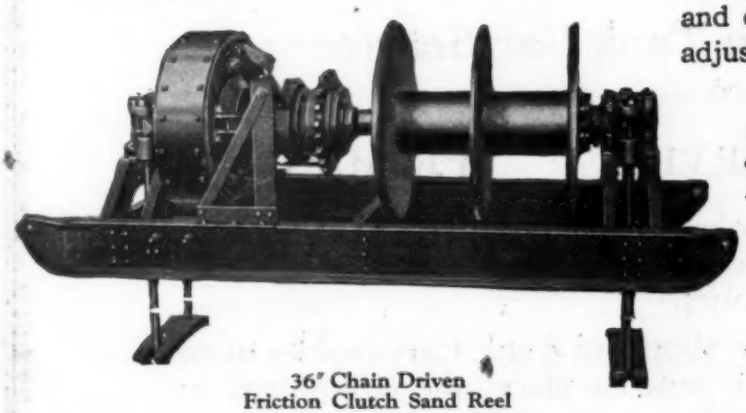
An innovation has been started by the Axelson organization in a traffic officer to stand guard at the drive-way entrance to the plant. His function is to see that each machine driven into the yards is stopped at the proper signal. The management considers this a safeguard to employes who are passing from the machine shop to the office.

"Pulling a Ten-Inch Bailer from a Depth of 3150 Feet and works perfectly"

The above is taken verbatim from one of the many reports in our files, all indicating the perfect working of Parkersburg Chain Driven Sand Reels and Bailers.



26″ Friction Clutch
Chain Driven Bailer



36″ Chain Driven
Friction Clutch Sand Reel

And perfect working of these Machines means economy wherever they are used.

Economy of time because the bailing operation is speeded up to an almost unbelievable degree.

Economy of materials as there is no contact with or wear on the Band Wheel.

No damage to belt, and sand line is safely stored and protected.

Economy of human exertion because there is no necessity for the operator to spend all his strength in maintaining friction between Sand Reel and Band Wheel, nor does he have to contend with the usual jars and jolts.

The line includes a size and type for both Rotary and Cable Tool work and for depths of from 500 to over 3000 feet.

Installation is simple and operation is easy and does not require constant attention and adjustment.

Let us tell you more regarding these perfected, durable, efficient and above all—economical Machines.

Ask for Booklet "Cut Your Bailing Time in Half"

The PARKERSBURG RIG & REEL COMPANY

Main Office and Works, Parkersburg, W. Va. ***New York Office,*** 30 Church St.

California Representatives, BUCK & STODDARD
485 California St., San Francisco, Calif.; Box 720, Arcade Station, Los Angeles, Calif.

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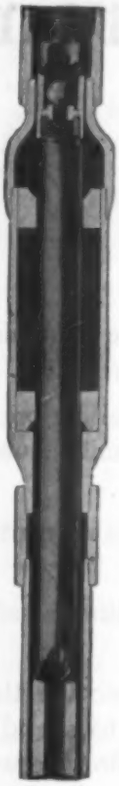

Top of "Tex"

"Let a Man Try One, and His Lease Will Soon Be All 'Tex'"

That's what one operator said who uses "Tex" plunger Working Barrels and who KNOWS. Our problem is only to get you started—to get you to try just ONE.

The stuffing box feature alone makes the "Tex" many times more valuable than any other working barrel on the market. It packs itself automatically. The stuffing box is shown in this advertisement at the left. The upper gland, as will be noted, is perfectly free to move downward while wear in the packing takes place.

We suggest that you try just ONE and learn for yourself how the "Tex" quickly pays for itself by greatly reducing the number of pullings.

1—No cups to wear out.

2—No smooth finish necessary in the working barrel tube.

3—No metal plunger in contact with a metal cylinder.

4—Pumps floating sand.

"Tex"

5—Does not cut oil.

6—Eliminates frequent rod pulling.

7—Increases capacity and production.

8—Most economical working barrel on the market.

Bottom of "Tex"

BRADFORD MOTOR WORKS, Bradford, Pa.

Branch Factory & Warehouse: Tulsa, Oklahoma

GENERAL AMERICAN TANK CAR CORPORATION

Pioneers in Tank Car Service

1900——1924

QUALITY SERVICE PERMANENCY

Our permanency established through our record of twenty-four years of satisfactory service to shippers under all conditions at any and all times.

Our fleet of over twelve thousand Tank Cars enables us to deliver promptly at any time or place, the equipment to meet your particular needs.

Long or short time leases at reasonable rates

Call on us for your requirements, whether building new cars, leasing, repairing or rebuilding

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SQUEAKS from the BULL WHEEL

For further proof that "Oil and Authors Do Not Seem to Mix," take this line from a form letter sent out by Harper and Brothers as advertising for "The Black Golconda," by Isaac F. Marcosson:

"Sometime you **sput** in a well that does not bring in oil. But if you diginto "The Black Golconda" by Isaac Marcosson you won't need a **go-devil** to bring in the crude."

The Reason

"Now suppose," she said "a man working on the river bank suddenly fell in. He could not swim, and would be in danger of drowning. Picture the scene. The man's sudden fall; the cry for help. His wife knows his peril and hearing his screams, rushes immediately to the bank. Why does she run to the bank?"

Whereupon a boy in the rear exclaimed: "To draw his insurance money."—Trumbell Cheer.

Mother had to leave little sister and the new baby in charge of big sister for the first time. Baby was crying lustily.

Big Sister — Oh, dear, why doesn't she stop crying? I don't know what to do with her.

Little Sister—Why? Didn't the directions come with her?—London Answer.

Sad Days These

Romantic Old Maid—Tell me, have you ever picked up any bottles on the beach?

Boatman—Werry often, miss.

Romantic Old Maid — And have you found anything in them?

Boatman—Not a blessed drop, miss.—Patton's Monthly.

Sister's Don't

"Sometimes I don't know what to make of you."

"Well, don't make an old maid of me, whatever you do."—Boston Transcript.

"And how did you come to be put in here, my good man?"

"I'm unlucky," declared the imprisoned wood alcohol vendor, who was in a confidential mood. "One of my customers didn't go blind and he identified me."

"Does your father object to kissing?"

"I don't know. Shall I tell him you would like to kiss him?"

The man had been in the public telephone booth for twenty-five minutes. Although he held the receiver attentively to his ear, he was not observed to make use of the mouthpiece.

The patience of a would-be user of the 'phone being at last exhausted, he opened the door of the booth and politely inquired: "Are you speaking to anybody?"

"Yes," sadly replied the silent one, "I'm speaking to my wife!"

Going, or Coming

"Crimson Gulch hasn't parking space enough to accommodate the automobiles that come to town."

"No, sir," answered Cactus Joe. "This here is a growing community with expenses to meet. If we can't ketch a flivver for speedin' we get it for standin' still." — Washington Star.

Blind Love

A young lady had a terrible experience the other evening. She forgot her steady was bowlegged and when she went to sit on his knees she fell through and nearly broke her neck.

Taking His Time

"Have you said your prayers, Bobby?"

"Yes, mother."

"And did you ask God to make you a good boy?"

"Yes, mother—but not yet."

Lady Shoppers

"Do you need any shoes?"

"No."

"Neither do I. Let's go into this shoe store and rest while they try some on us."

How the Trouble Started

Little Lucy (to guest)—Do you like that cake, Mrs. Brown?

Mrs. Brown—Yes, dear, very much.

"That's funny, 'cause mother said you haven't any taste."

Any Fool Would Know That

"Never jump into the bathtub after a heavy meal," said the doctor.

"I never do," said the patient. "When I'm after that I always jump into the dining room."

She—Have you any secrets in your past?

He—Oh, none to speak of.

Progressive

"How do you find marriage?"

"During courtship I talked and she listened. Now we both talk and the neighbors listen."

A Problem Solved

Poet (in despair)—Wife, the wolf is at the door. What shall we do?

Wife—Sh-h! Go down to the first floor, lasso him with your belt, and we'll cook him for tea.

Got the Job

A husband is only a husband, but a good job makes one a living.

Wall Street firm advertised for a stenographer and a young woman applied.

"Are you married?" asked the manager.

"Yes."

"Sorry, but we employ only unmarried women."

The next day she came back and applied for the job again.

"I told you we do not employ married women," snapped the manager.

"I know it," she replied. "I went right out and got a divorce."

"Won't you sing something?" asked the young man.

The young bobbed-haired flapper sat down at the piano and sang "Abide With Me."

He grabbed his hat and made for the door.

"Whatcher hurry?" she demanded.

"Well, sweetie," he said, "I just happened to think it's leap year."

The Simple Answer

First Member of Cavalry Detachment—Lookee heah, Joe, how come you-all to teach dat der mule all dem tricks? Ah can't teach mah mule nothing!

Second Ditto — Dat's easy; you-all jes' has to know moh dan de mule.

The Weaker Sex

"They tell me Simpson had quite a scrap with his wife last night."

"What was wrong with him?"

"I didn't hear."

"Liquor, do you suppose?"

"No, she licked him."

Nip: "I fell last night and struck my head on the piano."

Tuck: "Hurt yourself?"

Nip: "No, luckily I hit the soft pedal."—Punch Bowl.

STANDARD PIPE CUTTING MACHINES

What Do YOU Look For In A Pipe Threader?

Enduring strength, swift, efficient action, operating economy—all these are what you naturally look for in a Pipe Threader and Cutter; and all these are inherent characteristics of the STANDARD.

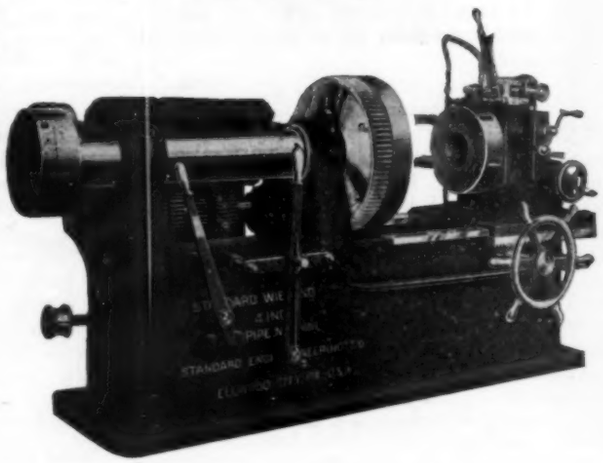
Enduring strength resulting from sturdy construction; swift efficient action resulting from the use of wide chasers and constant speed motors; operating economy resulting from simplicity of construction and design have given the STANDARD the wide reputation it so well deserves.

Our latest bulletins give complete details of the STANDARD. Write for them today—also for our partial list of Standard users.

STANDARD ENGINEERING CO.

ELLWOOD CITY, PENNA.

WIELAND



TEXACO

Petroleum Products

HIGH GRADE UNIFORM QUALITY

Gasoline	Pale Oils	Machine Oils	Waxes
Kerosene	Red Oils	Cylinder Oils	Asphalts
Fuel Oils	Black Oil	Car Oils	Road Oils
Diesel Fuels	Floor Oils	Greases	Asphalt Cement
Bunker Oils	Spindle Oils	Cup Greases	Pipe Coating
Signal Oils	Motor Oils	Gear Lubricants	Roofing
Miners Oil	Engine Oils	Axle Greases	Roofing Cement
Gas Oil	Dynamo Oils	Wire Rope Lubricants	
Distillates			

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Export Dept. 17 Battery Place, New York

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Stanley Belting Corp.

Boilers—
Bridgeport Machine Co.
The Brownell Co.
D. F. Connolly Agency
Continental Supply Company
Frick-Reid Supply Co.
International Supply Co.
The National Supply Cos.
Oil Well Supply Company
Republic Supply Company
Regan Forge & Engineering Co.
Titusville Iron Works Co.
United Iron Works, Inc.
See Oil Field Supplies and Tanks

Boiler Tubes—
The Tyler Tube & Pipe Co.

Boiler Scale Remover—
Ward Chemical Co.

Blowout Preventer—
Baash-Ross Tool Company
Cameron Iron Works
Continental Supply Company
Regan Forge & Engineering Co.

Burners—
Continental Supply Company
Gaso Pump & Burner Mfg. Co.
Gould Burner Company
Regan Forge & Engineering Co.

Bull Wheels—
Continental Supply Company
International Derrick & Equipment Company
Lee C. Moore & Co., Inc.

Calf Wheels—
Continental Supply Company
International Derrick & Equipment Company
Lee C. Moore & Co., Inc.

Casing—
Continental Supply Company
Regan Forge & Engineering Co.
Republic Supply Company
Superior Tube Co.

Casing Shoes—
Baker Casing Shoe Co.
Bridgeport Machine Co.
Continental Supply Company
Gulf Coast Machine & Supply Co.
The National Supply Cos.
Pelican Well Tool & Supply Co.
Regan Forge & Engineering Co.
Republic Supply Company
W-K-M Company

Cement Hardener—
The Sullivan Company
W-K-M Company

Chain Blocks—
Yale & Towne Mfg. Company

Charcoal Iron Boiler Tubes—
The Tyler Tube & Pipe Co.

Control Heads—
Continental Supply Company
Southern Brass Mfg. & Plating Co.

Core Drills—
Acme Oil & Drill Company
Elliott Core Drilling Co.
Spengler Core Drilling Co.

Compressors—
Butler Mfg. Company
Continental Supply Company
F. W. Heitmann Co.
Hope Engineering Company
Sullivan Machinery Co.
United Iron Works, Inc.

Cordage—
D. F. Connolly Agency
Continental Supply Company
The National Supply Cos.
Republic Supply Company

Crown Blocks—
American Well & Pros. Co.
Baash-Ross Tool Company
Boykin Machinery & Supply Co.
Continental Supply Company
Gulf Coast Machine & Supply Co.
International Derrick & Equipment Company
Lufkin Foundry & Machine Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Superior Tube Co.

Couplings—
Continental Supply Company
Harrisburg Pipe & Pipe Bending Company
Steel Coupling Co.
Superior Tube Co.

Dehydrating Processes—
Wm. S. Barnickel Co.
Petroleum Rectifying Co.

Derricks and Rigs—
International Derrick & Equipment Company
Lee C. Moore & Co.
National Turnbuckle Derrick Co.
Parkersburg Rig & Reel Co.
Peden Iron & Steel Co.
Robertson-McDonald Lumber Co.
Superior Tube Co.
Wertzberger Derrick Co.

Diamond Core Drills—
Sullivan Machinery Co.

Disc Bits—
Continental Supply Company

Ditchers—
Buckeye Traction Ditcher Co.

Draw Works—
Continental Supply Company
Lufkin Foundry & Machine Co.

Drilling Cables—
American Cable Co.
Bridgeport Machine Co.
D. F. Connolly Agency
Continental Supply Company
Frick-Reid Supply Company
F. W. Heitmann Co.
The National Supply Cos.
Peden Iron & Steel Co.
Regan Forge & Engineering Co.
Republic Supply Company
Williamsport Wire Rope Co.

Drill Pipe Slips—
Baash-Ross Tool Company
Continental Supply Company

Drilling Machines—
Bridgeport Machine Co.
Continental Supply Company
Keystone Driller Co.
Parkersburg Rig & Reel Co.
Star Drilling Machine Co.

Drill Collars—
Baash-Ross Tool Company
Continental Supply Company

Drill Pipe Cutting—
Baash-Ross Tool Company

Drilling Tools—
Baash-Ross Tool Company
Continental Supply Company

Drill Pipe—
Continental Supply Company
Frick-Reid Supply Co.
Republic Supply Company
Reading Iron Company
Superior Tube Company

Drilling Equipment—
Baash-Ross Tool Company
Bridgeport Machine Co.
Continental Supply Company
Republic Supply Company
Western Supply Company

Drive Pipe—
Continental Supply Company
Republic Supply Company
Reading Iron Co.
Superior Tube Co.

Electrical Equipment—
Westinghouse Elec. & Mfg. Co.

Elevators—
Bridgeport Machine Company
Continental Supply Company
The Cunningham Company
Dunn Mfg. Co.
Gulf Coast Machine & Supply Co.
LeBus Rotary Tool Works
Wilson & Willard Mfg. Co.

Engines, Diesel—
Western Machinery Co.

Engines, Gas—
Continental Supply Company
Frick-Reid Supply Co.
Hope Engineering & Supply Co.
The Pattin Bros. Co.
Western Machinery Co.

Engines, Oil—
Continental Supply Company
Frick-Reid Supply Co.
The Pattin Bros. Co.
Western Machinery Co.

Engines, Pumping—
Ajax Iron Works
Bessemer Gas Engine Co.
Bridgeport Machine Co.
Continental Supply Company
The Brownell Co.
De La Vergne Machine Co.
C. C. Fetty & Co.
Franklin Valveless Engine Co.
Frick-Reid Supply Co.
Hope Engineering Co.
Lucey Mfg. Corp.
Lufkin Foundry & Machine Co.
The National Supply Cos.
National Transit Pump & Machine Company
Oil Well Supply Co.
Peden Iron & Steel Company
Republic Supply Company
Rock Island Plow Co.
Southern Engine & Pump Co.
Titusville Iron Works
Western Machinery Company

Engineers—
A. C. Bierman
David Donoghue
C. C. Fetty & Co.
Foster & Reiter
F. W. Freeborn Engineering Co.
Hope Engineering & Supply Co.
Lee C. Moore & Co.
Oil Conservation Engineering Co.
L. H. Owen
D. T. Ring

Fire Protection—
Continental Supply Company
Oil Conservation Engineering Co.

Fish Tail Bits—
Continental Supply Company
Frick-Reid Supply Company
Gulf Coast Mach. & Sup. Co.
Lucey Manufacturing Corp.
Pelican Well Tool & Supply Co.
Regan Forge & Engineering Co.
W-K-M Co.

Floor Circle Brace—
Continental Supply Company
Dunn Mfg. Co.

Fuel Oil—
Gulf Refining Company
Sinclair Refining Company

Gas Engines—
S. M. Jones Company

Gas Traps—
Continental Supply Company
Smith Separator Company
Trumble Gas Trap Co.

Gasoline Extraction Compressors—
Bessemer Gas Engine Co.
Continental Supply Company
Hope Engineering & Supply Co.
Sullivan Machinery Co.

Gasoline and Oil Storage Tanks—
Butler Mfg. Co.
Graver Corporation
Continental Supply Company
Kansas City Struct. Steel Co.
Parkersburg Rig & Reel Co.

Gauges—
Continental Supply Company
Oil Conservation Engineering Co.

Generators—
R-F Electrical Mfg. Co.

Genuine Wrought Iron Casing—
Reading Iron Co.
Superior Tube Co.

Geologists—
A. C. Bierman
Alexander Deussen
David Donoghue
Edwin B. Hopkins
Foster & Reiter
Heath M. Robinson
L. H. Owen

Grips and Clamps—
Continental Supply Company
J. P. Ratigan
W-K-M Co.

Heat Exchangers—
Brown Welding & Machine Co.
Hope Engineering & Supply Co.

Hoists—
Alamo Iron Works
Emsco Steel Products Co.

Hose—
Continental Supply Company
D. F. Connolly Agency

Houses—
Crain Ready-Cut House Co.

Hydrometers—
The Braun Corp.

Laboratory Equipment—
Continental Supply Company
Fort Worth Laboratories

Lapwelded Steel Boiler Tubes—
The Tyler Tube & Pipe Co.

Lighting Systems—
Bridgeport Machine Co.
Continental Supply Company
R-F Electrical Mfg. Co.
Westinghouse Elec. & Mfg. Co.

Line Pipe—
Continental Supply Company
Republic Supply Company
Reading Iron Co.
Superior Tube Co.

Long Stroke Pumps—
The Reschke Machine Works Co.
C. C. Fetty & Company

Lumber—
Robertson-McDonald Lumber Co.

Manufacturers—
Robinson Packer Co.

Maps—
Heydrick Mapping Co.

Meters—
Continental Supply Company

Motors—
Twin City Company
Westinghouse Elec. & Mfg. Co.

Oil Field Supplies—
Bridgeport Machine Co.
Butler Mfg. Co.
Continental Supply Company
D. F. Connolly Agency
The Cunningham Company
C. C. Fetty & Co.
Frick-Reid Supply Co.
Graver Corporation
Gulf Coast Mach. & Sup. Co.
Erle P. Halliburton
International Supply Company
Kansas City Struct. Steel Co.
Lee C. Moore & Co.
Lucey Manufacturing Corp.
The National Supply Cos.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Peden Iron & Steel Co.
Pelican Well Tool & Sup. Co.
Republic Supply Company
Regan Forge & Engineering Co.
Robinson Packer Co.
Smith Separator Company
Southern Brass Mfg. & Plating Co.
Superior Tube Co.
United Iron Works, Inc.
W-K-M Co.
Western Supply Company

GUIDE FOR PURCHASERS—Continued

Oil Stills—
The Braun Corp.

Oil Thieves—
The Braun Corp.

Oilwell Casing—
Continental Supply Company
Frick-Reid Supply Company
Republic Supply Company
Superior Tube Co.

Oil Well Cementing—
Erle P. Halliburton

Oil Well Shooting—
U. S. Torpedo Co.

Overshots—
Baash-Ross Tool Company
Continental Supply Company
LeBus Rotary Tool Works

Packers—
Continental Supply Company
The Guiberson Corp.
Layne & Bowler
Robinson Packer Co.
Pelican Well Tool & Supply Co.
Regan Forge & Engineering Co.
Rhodes Master Packing Co.
Western Supply Company
W-K-M Co.

Packing—
Continental Supply Company
D. F. Connolly Agency
Frick-Reid Supply Co.
The National Supply Cos.
Peden Iron & Steel Co.
Pelican Well Tool & Sup. Co.
Republic Supply Company
Rhodes Master Packing Co.

Paints—
Continental Supply Company
Peden Iron & Steel Co.

Panel Boards—
Westinghouse Elec. & Mfg. Co.

Patents—
Hardway & Cathey
Jack A. Schley
Jesse R. Stone

Pipe Grips—
Continental Supply Company
W-K-M Co.

Pipe—
A. M. Byers Co.
Continental Supply Company
W. E. Detlor
Frick-Reid Supply Co.
F. W. Heitmann Co.
Harrisburg Pipe & Pipe Bending Company
International Supply Co.
The National Supply Cos.
Oil Well Supply Co.
Peden Iron & Steel Co.
Reading Iron Co.
Republic Supply Company
Superior Tube Company.
Williamsport Wire Rope Co.

Pipe Screwing Machines—
Buckeye Traction Ditcher Co.
California Pipe Line Machine Co.

Pipe Threading Machine—
Standard Engineering Company

Pipe Wrenches—
Continental Supply Company
Dunn Mfg. Co.
The Guiberson Corp.
LeBus Rotary Tool Works
Republic Supply Company

Portable Buildings—
Butler Mfg. Co.
International Derrick & Equipment Company

Portable Compressors—
Continental Supply Company
Sullivan Machinery Co.

Portable Drilling Rigs—
Bridgeport Machinery Co.
Continental Supply Company
Lee C. Moore & Co.
Oil Well Service Co.
Parkersburg Rig & Reel Co.
The National Supply Cos.

Pulleys—
Continental Supply Company
International Derrick & Equipment Company
Lee C. Moore & Co.

Pulling Machines—
Clark Machine Co.
Continental Supply Company
Iron King Mfg. Co.
Safety Pulling Machine Co.

Pumps—
The Reschke Machine Works Co.
Axelson Machine Co.
Bradford Motor Works
Continental Supply Company
D. & B. Pump & Sup. Co.
C. C. Fetty & Co.
Frick-Reid Supply Co.
Gaso Pump & Burner Mfg. Co.
Goulds Manufacturing Co.
Lucey Manufacturing Corp.
National Transit Pump & Mach. Co.
Oil Well Supply Co.
Pelican Well Tool & Supply Co.
Republic Supply Company
The Reschke Machine Works Co.
Southern Engine & Pump Co.
Texas Oil Pump Co.
United Iron Works, Inc.

Pumping Powers—
Continental Supply Company
C. C. Fetty & Co.
Frick-Reid Supply Co.
International Supply Company
Jensen Bros. Mfg. Co.
Kansas City Hay Press Co.

Refined Products—
Gulf Refining Company
Humble Oil & Refining Co.
Sinclair Refining Co.

Recorders—
Fort Worth Laboratories

Refinery Equipment—
Butler Mfg. Co.
Continental Supply Company
Graver Corporation
Kansas City Struct. Steel Co.
Oil Conservation Engineering Co.
Republic Supply Company
Smith Separator Company
Titusville Iron Works
United Iron Works, Inc.
Wyatt Metal & Boiler Works

Refined Products—
Magnolia Petroleum Company
Texas Company

Rig Irons—
Continental Supply Company
International Supply Co.
Lee C. Moore & Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Republic Supply Company

Rig Timbers—
D. D. Wertzberger

Rotaries—
International Supply Company

Rotary Rock Bits—
Continental Supply Company
Hughes Tool Co.

Rotary Fish Tail Bits—
Continental Supply Company
Pelican Well Tool & Supply Co.
Regan Forge & Engineering Co.
Republic Supply Co.
W-K-M Co.

Separators—
Butler Mfg. Co.
Continental Supply Company
Smith Separator Company
Trumble Gas Trap Co.

Structural Steel—
Butler Mfg. Co.
Kansas City Struct. Steel Co.
United Iron Works, Inc.

Steel Derricks—
Continental Supply Company
Emsco Steel Products Co.
International Derrick & Equipment Company
Lee C. Moore & Co. Inc.
Superior Tube Co.

Steel Crown Blocks —
Continental Supply Company
Gulf Coast Mach. & Sup. Co.
International Derrick & Equipment Company
Lee C. Moore & Co. Inc.
Parkersburg Rig & Reel Co.
Superior Tube Co.

Steel Manufacturers—
Colonial Steel Co.

Steel Storage Tanks—
Butler Mfg. Co.
Continental Supply Company
Graver Corporation

Sucker Rod Lines—
D. F. Connolly Agency
Continental Supply Company

Sucker Rod Elevators—
The Cunningham Co.

Strainers—
Continental Supply Company
Emsco Steel Products Company
Layne & Bowler Co.
J. H. McEvoy & Co.
Pelican Well Tool & Supply Co.
W-K-M Co.

Sucker Rod Hooks—
The Cunningham Co.

Sucker Rod Sockets—
Bradford Motor Works
Continental Supply Company
The Cunningham Co.
Brown Welding & Machine Co.

Sucker Rods—
Axelson Machine Co.
Columbus Sucker Rod Co.
Continental Supply Company
D. & B. Pump & Sup. Co.
Dunn Mfg. Co.
Frick-Reid Supply Co.
S. M. Jones Co.
The National Supply Cos.
Oil Well Supply Company
J. P. Ratigan
Republic Supply Company

Swabs—
Continental Supply Company
The Cunningham Company

Tank Bolts—
Continental Supply Company

Tanks—
American Tank Co.
Butler Mfg. Co.
Black, Sivalls & Bryson
Columbian Steel Tank Co.
Continental Supply Company
The Brownell Co.
Gantz Tank Co.
Graver Corporation
Kansas City Structural Steel Co.
Maloney Tank Co.
Parkersburg Rig & Reel Co.
Petroleum Iron Works
Pittsburgh-Des Moines Steel Co.
United Iron Works
Wyatt Metal & Boiler Works

Tank Deadwood—
Robertson-McDonald Lumber Co.

Tank Equipment—
Continental Supply Company
Oil Conservation Engineering Co.

Temper Screws—
Burns Tool Co.

Thermometers—
Continental Supply Company
Fort Worth Laboratories

Timbers—
Robertson-MacDonald Lumber Co.

Tongs—
Bridgeport Machine Co.
Continental Supply Company
Dunn Mfg. Co.
Guiberson Corp.
LeBus Rotary Tool Works
Pelican Well Tool & Supply Co.
Wilson & Willard Mfg. Co.
W-K-M Co.

Tool Joints—
American Well & Pros. Co.
Baash-Ross Tool Company
Boykin Machinery & Sup. Co.
Bridgeport Machine Co.
Continental Supply Company
Emsco Steel Products Co.
Hughes Tool Co.
Pelican Well Tool & Sup. Co.
Regan Forge & Engineering Co.
Republic Supply Co.
W-K-M Co.

Tools (Fishing and Drilling)—
Bridgeport Machine Co.
Brown Welding & Machine Co.
Continental Supply Company
Frick-Reid Supply Co.
Hughes Tool Co.
International Supply Co.
Oil Well Supply Co.
Peden Iron & Steel Co.
Pelican Well Tool & Supply Co.
Regan Forge & Engineering Co.
Republic Supply Company
Sullivan Machinery Co.
Western Supply Company
W-K-M Co.

Toothless Slips—
LeBus Rotary Tool Works

Tractor Winch—
Rock Island Plow Co.
Twin City Company

Traveling Blocks—
Baash-Ross Tool Company
Boykin Machinery & Sup. Co.
Continental Supply Company
Gulf Coast Machine & Sup. Co.
Lufkin Foundry & Machine Co.
Regan Forge & Engineering Co.

Tret-O-Lite—
W. S. Barnikel & Co.

Tubing Catcher—
Continental Supply Company
Dunn Mfg. Co.
Guiberson Corp.

Tubing Lines—
Continental Supply Company
D. F. Connolly Agency

Tubing—
Continental Supply Company
Republic Supply Company
Reading Iron Co.
Superior Tube Co.

Underreamers—
Bridgeport Machine Co.
Continental Supply Company
Western Supply Company
Wilson & Willard Mfg. Co.

Vacuum Pumps—
Continental Supply Company
Sullivan Machinery Co.

Valves—
Bradford Motor Works
Continental Supply Company
Darling Valve & Mfg. Co.
The Charles N. Hough Mfg. Co.
Texas Oil Pump Co.
Ludlow Valve Mfg. Co.
Oil Conservation Engineering Co.
The Wm. Powell Co.
Pratt & Cady
Reading Steel Casting Co.
Reading Valve & Fittings Co.
Smith Separator Company
Sour Lake Machine Co.
Southern Brass Mfg. & Plating Co.
Westcott Valve Mfg. Co.
W-K-M Co.

Valves and Fittings—
Continental Supply Company
Darling Valve & Mfg. Co.
D. & B. Pump & Sup. Co.
Ludlow Valve Mfg. Co.
Lufkin Foundry & Machine Co.
The National Supply Cos.
Peden Iron & Steel Co.
The Wm. Powell Company
Pittsburgh Reinforced Brazing and Machine Company
Pratt & Cady
Republic Supply Company
Reading Steel Casting Co.
Reading Valve & Fittings Co.
United Iron Works
W-K-M Co.

Walking Beams—
Continental Supply Company
International Derrick & Equipment Company
Lee C. Moore & Co., Inc.

Welding and Cutting Equipment—
Continental Supply Company

Working Barrels—
Axelson Machine Co.
Bradford Motor Works
Continental Supply Company
D. & B. Pump & Sup. Co.
Republic Supply Company
The Charles N. Hough Mfg. Co.
Southern Brass Mfg. & Plating Co.
Texas Oil Pump Co.

Water Gauges—
Continental Supply Company
F. W. Heitmann Co.

Water Cans—
Continental Supply Company
H. P. Gott Mfg. Co.

Wire Line Clamps—
Western Supply Company

Wire Rope—
American Cable Co.
Bridgeport Machine Co.
D. F. Connolly Agency
Continental Supply Company
Houston Oil Field Material Co.
International Supply Co.
Regan Forge & Engineering Co.
Republic Supply Company
The National Supply Cos.
Williamsport Wire Rope Co.

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